

# 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

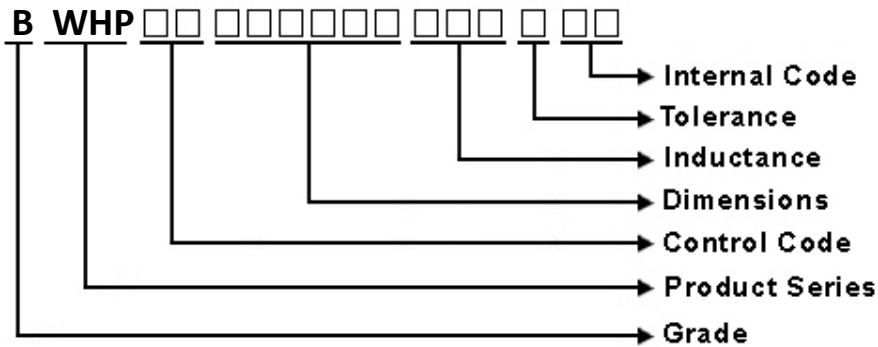
Series	Size Code (JIS/EIA)	Inductance (nH)
BWHP	1005/0402 1608/0603 2012/0805	1 ~ 820



## BWHP00161008 Series Specification

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

**2 Part Numbering:**

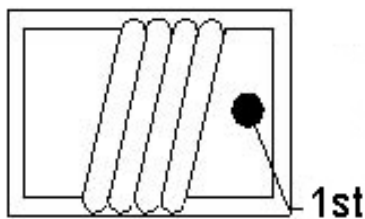


**3 Rating:**

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:**



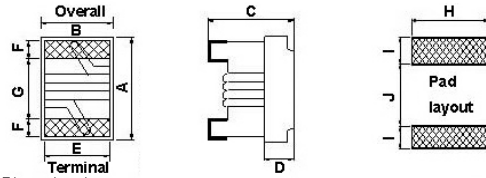
**Ex Marking: 1st → BRN**

**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

## BWHP00161008 Series Specification

### 6 Configuration and Dimensions and Unit Weight:



Dimensions in mm

TYPE	A	B	C	D	E	F	G	H	I	J
161008	1.6 <sup>+0.2</sup> <sub>-0.1</sub>	1.0±0.1	0.82 <sup>+0.2</sup> <sub>-0.1</sub>	0.3ref	0.70	0.30	0.95	1.02	0.64	0.64

Net Weight (grms)

SIZE CODE	Net Weight (grms)
161008	0.00335 (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)Max.	Tolerance (±%)	Color Code
								1st
BWHP001610081N8□00	1.8	250/250	23	16000	0.033	2100	J	BLK
BWHP001610082N2□00	2.2	250/250	13	15000	0.182	900	J	BRN
BWHP001610083N9□00	3.9	250/250	26	7500	0.062	1600	G,H,J	RED
BWHP001610084N3□00	4.3	250/250	26	7500	0.088	1300	G,H,J	ORN
BWHP001610084N7□00	4.7	250/250	25	7900	0.13	1100	G,H,J	YEL
BWHP001610086N8□00	6.8	250/250	40	5800	0.065	1400	G,H,J	GRN
BWHP001610087N2□00	7.2	250/250	32	5400	0.1	1400	G,H,J	BLU
BWHP001610087N5□00	7.5	250/250	32	5300	0.1	1300	G,H,J	VIO
BWHP0016100811N□00	11	250/250	41	4100	0.086	1400	G,H,J	GRY
BWHP0016100815N□00	15	250/250	42	3600	0.11	1200	G,H,J	WHT
BWHP0016100816N□00	16	250/250	40	3500	0.125	1100	G,H,J	BLK
BWHP0016100822N□00	22	250/250	40	3150	0.195	850	G,H,J	BRN
BWHP0016100823N□00	23	250/250	40	3000	0.15	850	G,H,J	RED
BWHP0016100824N□00	24	250/250	42	2950	0.125	1100	G,H,J	ORN
BWHP0016100827N□00	27	250/250	42	2800	0.2	780	G,H,J	YEL
BWHP0016100830N□00	30	250/250	49	2800	0.13	920	G,H,J	GRN
BWHP0016100833N□00	33	250/250	45	2700	0.17	680	G,H,J	BLU
BWHP0016100836N□00	36	250/250	44	2500	0.225	720	G,H,J	VIO
BWHP0016100839N□00	39	250/250	48	2450	0.19	680	G,H,J	GRY
BWHP0016100843N□00	43	250/250	45	2450	0.225	810	G,H,J	WHT
BWHP0016100847N□00	47	200/250	43	2300	0.24	680	G,H,J	BLK
BWHP0016100851N□00	51	200/250	42	2300	0.28	660	G,H,J	BRN
BWHP0016100856N□00	56	200/250	43	2200	0.3	610	G,H,J	RED
BWHP0016100868N□00	68	200/250	43	2000	0.33	600	G,H,J	ORN
BWHP0016100872N□00	72	150/250	37	1900	0.42	550	G,H,J	YEL

**NOTE:** □-tolerance G=±2% / H=±3% / J=±5%

- Operating temperature range - 4 0 °C ~ 1 2 5 °C (Including self - temperature rise)
- I<sub>rms</sub> for a 15°C temperature rise from 25°C ambient.
- L/Q Test OSC @200mV.
- Inductance would be correct Chilisin standard piece.
- weight: 3.350(mg) typ.

## BWHP00161008 Series Specification

Part No.	Inductance (nH)	L/Q Test Freq. (MHz)	Q Typ.	SRF (MHz)Typ.	RDC ( $\Omega$ )Max.	Irms (mA)Max.	Tolerance ( $\pm$ %)	Color Code 1st
BWHP0016100875N□00	75	150/250	37	1900	0.52	500	G,H,J	GRN
BWHP0016100882N□00	82	150/250	38	1800	0.46	510	G,H,J	BLU
BWHP0016100891N□00	91	150/250	45	1650	0.58	440	G,H,J	VIO
BWHP00161008R10□00	100	150/250	49	1700	0.54	470	G,H,J	GRY
BWHP00161008R11□00	110	150/250	47	1600	0.62	440	G,H,J	WHT
BWHP00161008R12□00	120	150/250	47	1550	0.72	420	G,H,J	BLK
BWHP00161008R15□00	150	150/250	47	1350	1.15	390	G,H,J	BRN
BWHP00161008R18□00	180	100/250	48	1300	1.5	310	G,H,J	RED
BWHP00161008R20□00	200	100/250	47	1250	2	280	G,H,J	ORN
BWHP00161008R21□00	210	100/250	48	1200	2	280	G,H,J	YEL
BWHP00161008R22□00	220	100/250	47	1100	2	280	G,H,J	GRN
BWHP00161008R25□00	250	100/250	45	1050	3	240	G,H,J	BLU
BWHP00161008R27□00	270	100/250	46	1050	2.25	260	G,H,J	VIO
BWHP00161008R30□00	300	100/250	47	990	2.8	220	G,H,J	GRY
BWHP00161008R33□00	330	100/250	46	930	3.6	180	G,H,J	WHT
BWHP00161008R36□00	360	100/250	47	930	4	170	G,H,J	BLK
BWHP00161008R39□00	390	100/250	47	880	4	170	G,H,J	BRN

**NOTE:** □-tolerance G= $\pm$ 2% / H= $\pm$ 3% / J= $\pm$ 5%

1. Operating temperature range - 4 0 °C ~ 1 2 5 °C (Including self - temperature rise)

2. Irms for a 15°C temperature rise from 25°C ambient.

3. L/Q Test OSC @200mV.

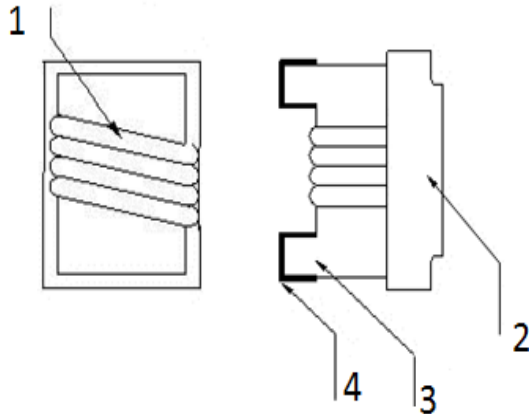
4. Inductance would be correct Chilisin standard piece.

5. weight: 3.350(mg) typ.

## BWHP00161008 Series Specification

### 8 BWHP00161008 Series

#### 8.1 Construction:



#### 8.2 Material List:

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

# BWHP00161008 Series Specification

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

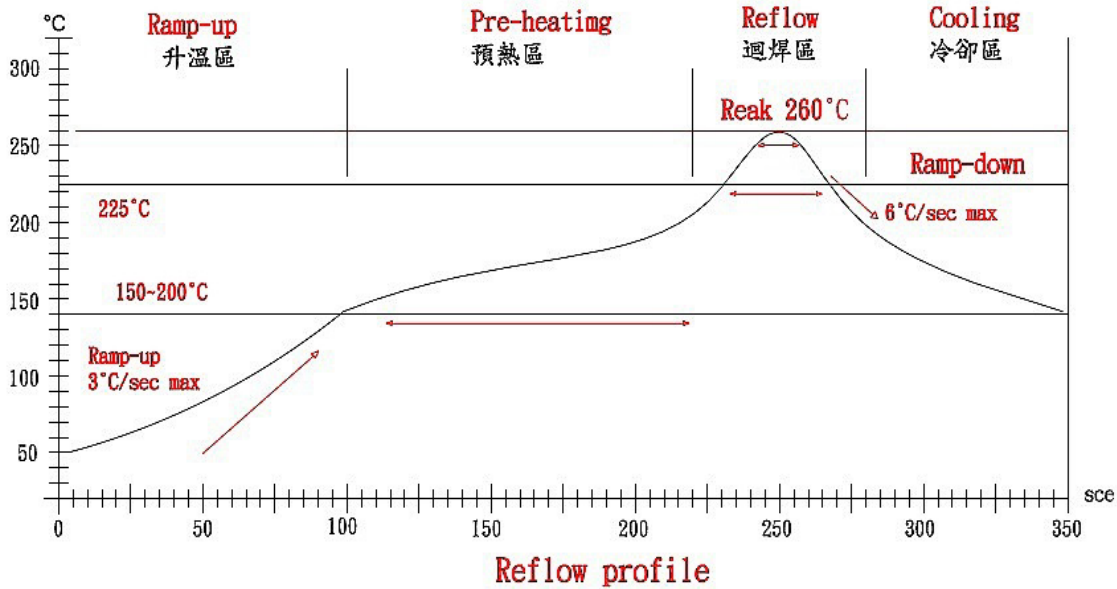
### 1-1.Environmental Performance

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

**BWHP00161008 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 :

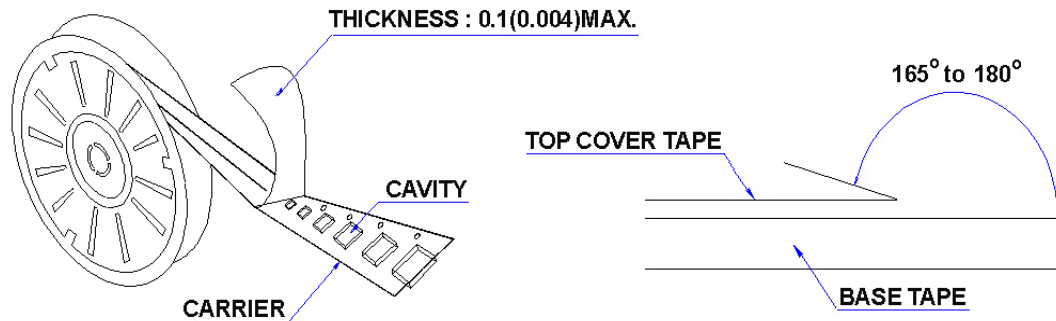
1. Re-flow possible times : within 2 times
2. Nitrogen adopted is recommended while in re-flow
3. Products can only be soldered with reflow

## BWHP00161008 Series Specification

### 10 Packaging:

#### 10.1 Packaging -Cover Tape

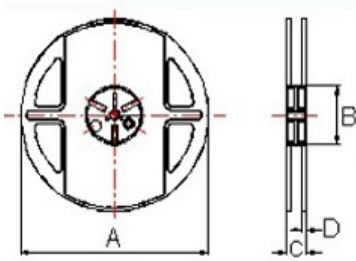
The force for tearing off cover tape is 10 to 100 grams in the arrow direction.



#### 10.2 Packaging Quantity

TYPE	PCS/REEL
161008	4000

#### 10.3 Reel Dimensions



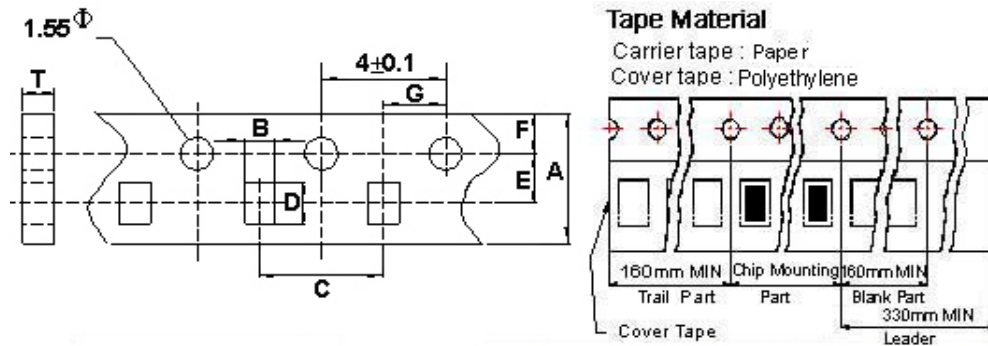
Dimensions in mm

TYPE	A	B	C	D
161008	178±1	60±0.5	12±0.5	1.5±0.5

## BWHP00161008 Series Specification

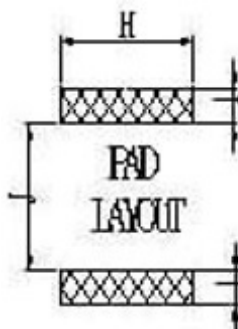
### 10 Packaging:

#### 10.4 Tape Dimensions in mm



TYPE	A	B	C	D	E	F	G	T
161008	8.0	1.23	4	1.90	3.5	1.75	2	1.05

### 11 Recommended Land Pattern:



Dimensions in mm

TYPE	H(In/mm)	I(In/mm)	J(In/mm)
161008	0.04/1.02	0.025/0.64	0.025/0.64

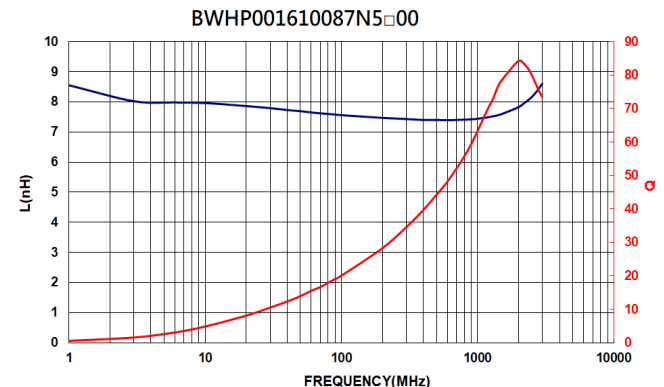
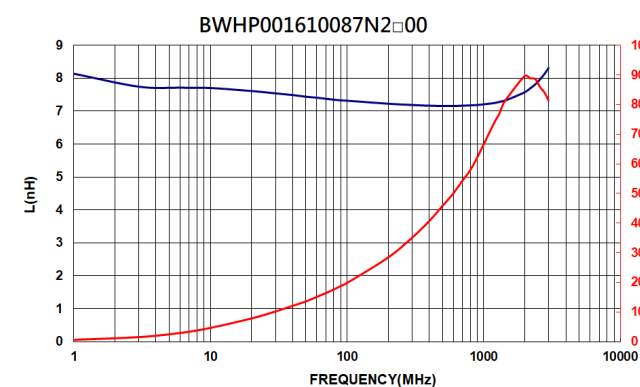
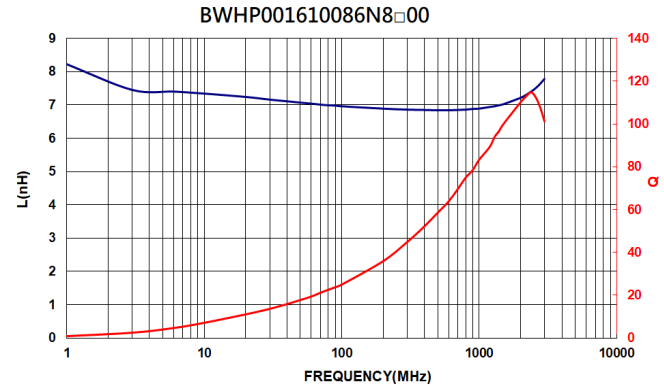
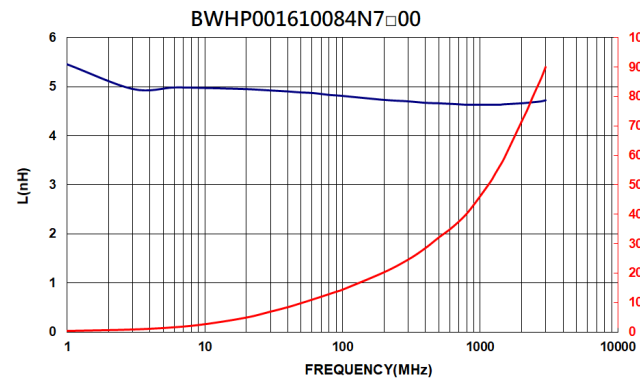
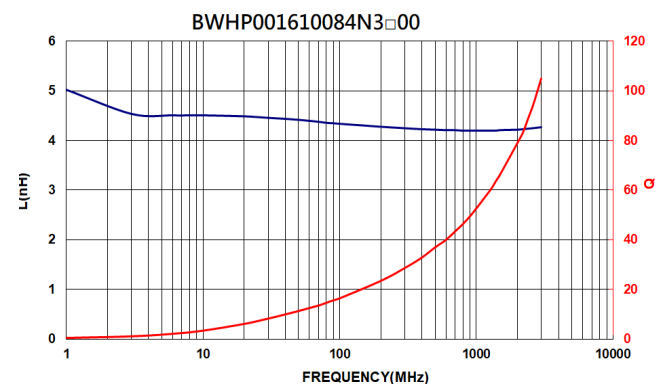
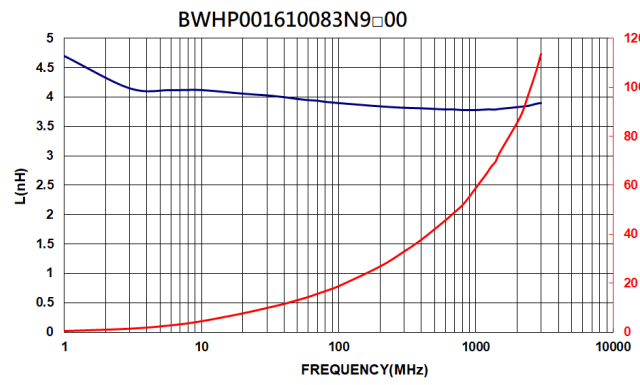
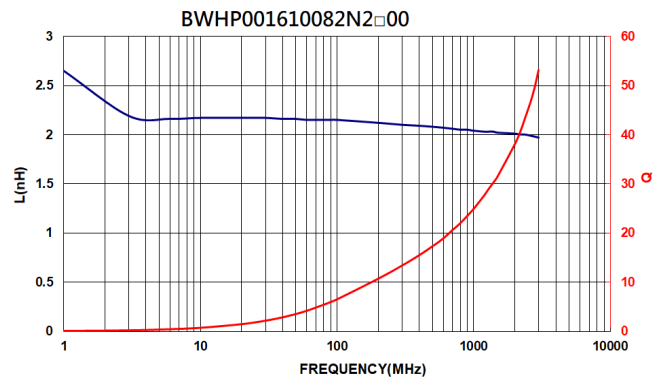
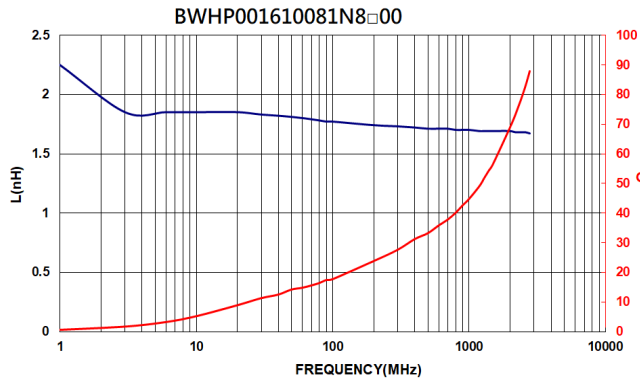
### 12 Note:

1. Please make sure that your product has been evaluated and confirmed against your specifications when our product is mounted to your product.
2. Do not knock nor drop.
3. 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.
4. 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.
5. Do not use or store in locations where there are conditions such as gas corrosion (salt, acid, alkali, etc.).
6. The moisture sensitivity level (MSL) of products is classified as level 1.

# BWHP00161008 Series Specification

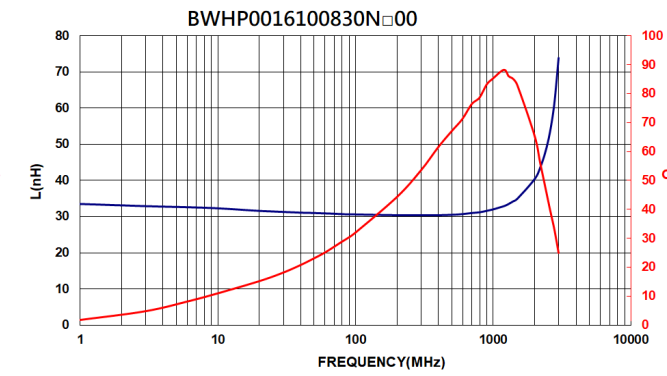
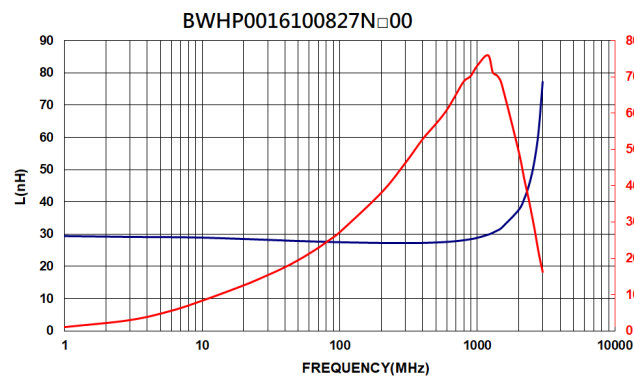
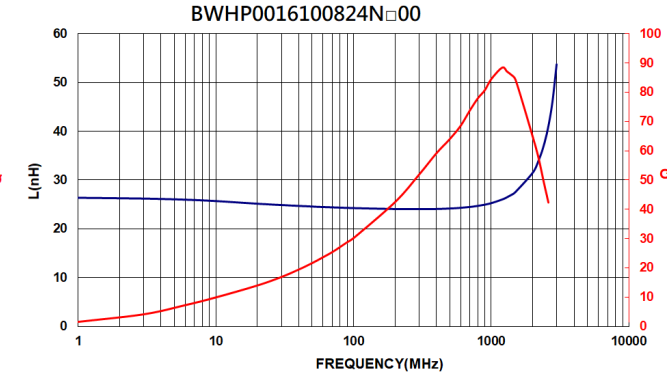
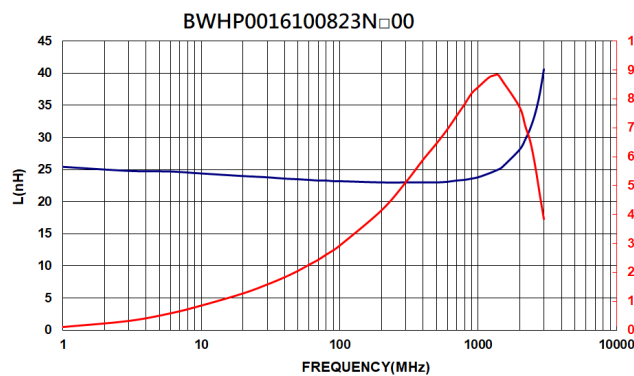
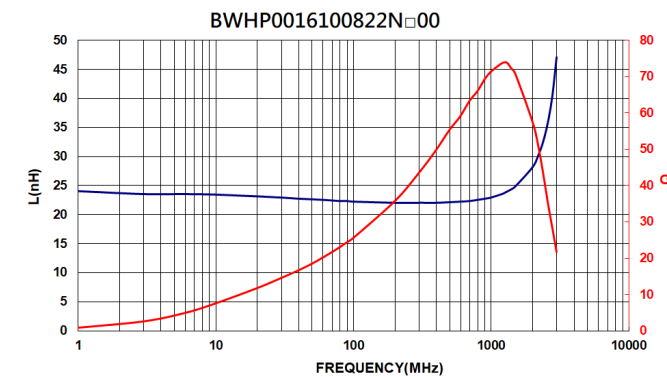
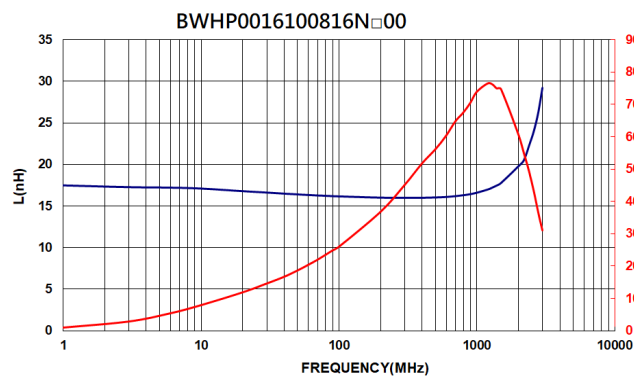
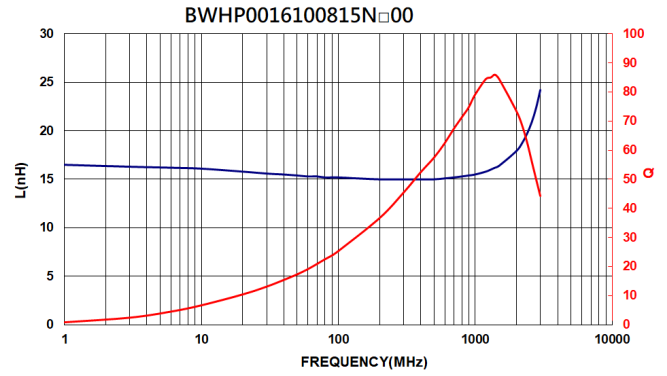
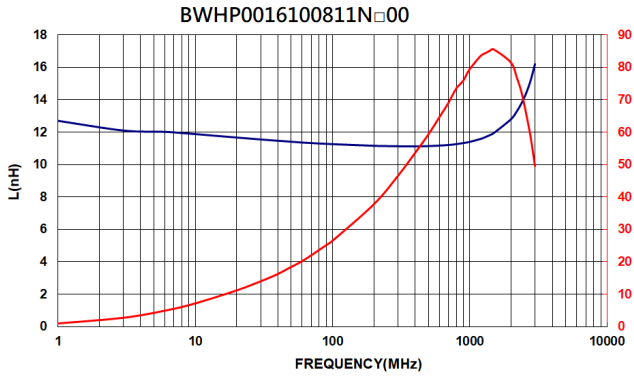
AEC-Q200

## 13 Graph:



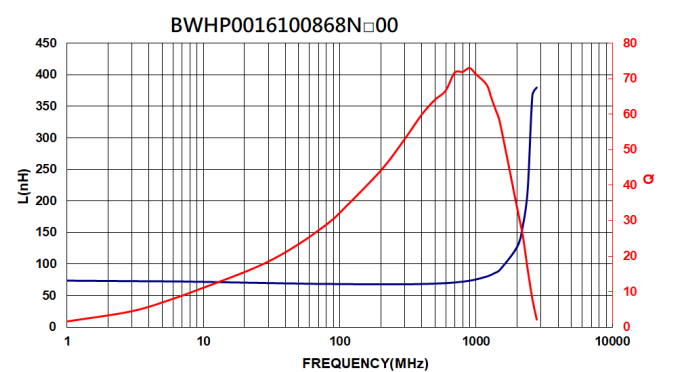
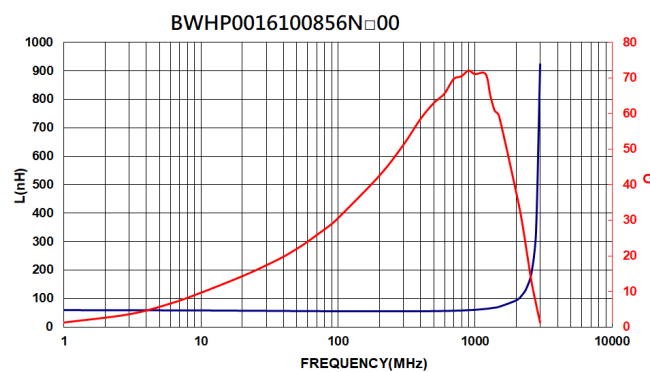
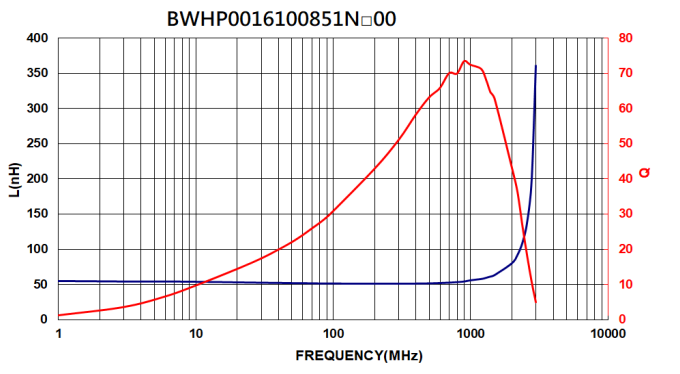
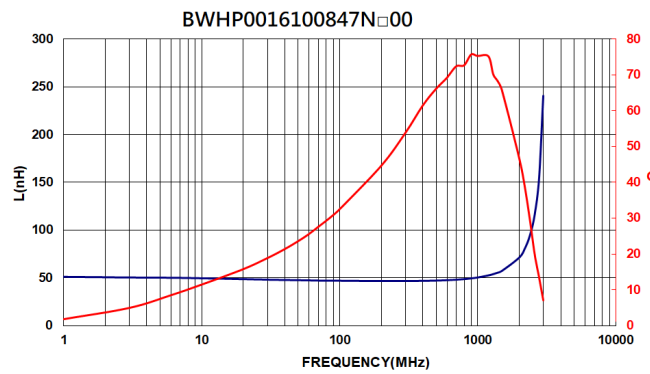
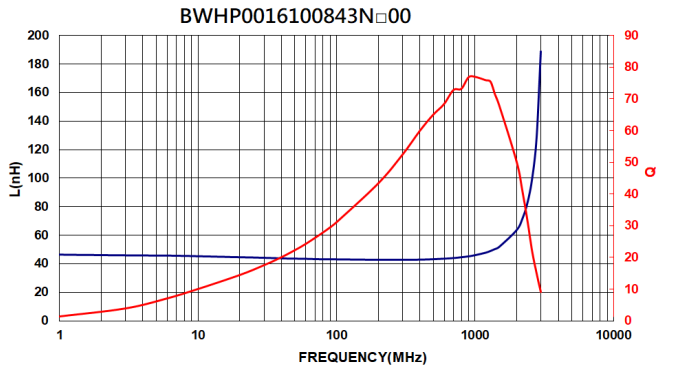
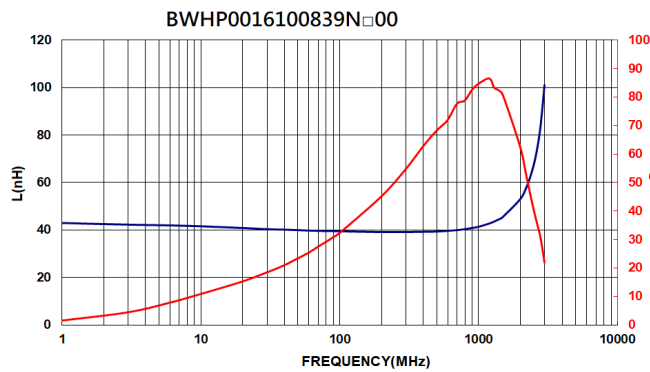
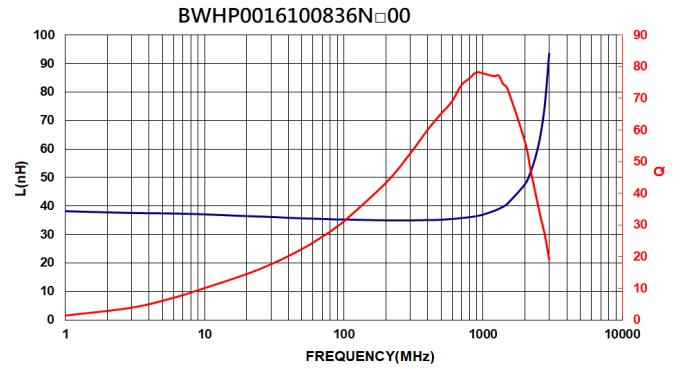
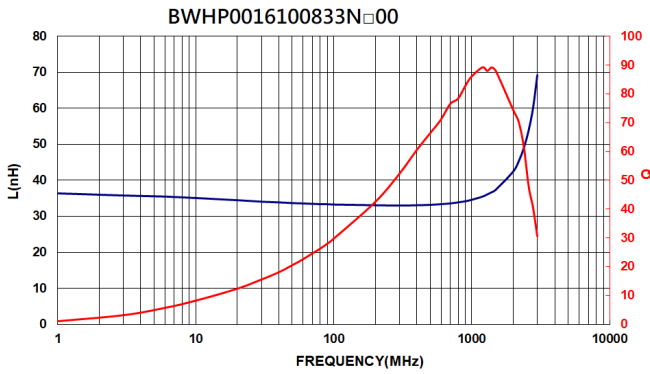
# BWHP00161008 Series Specification

AEC-Q200



# BWHP00161008 Series Specification

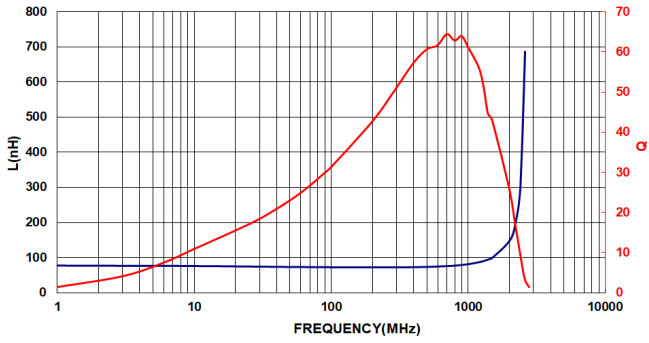
AEC-Q200



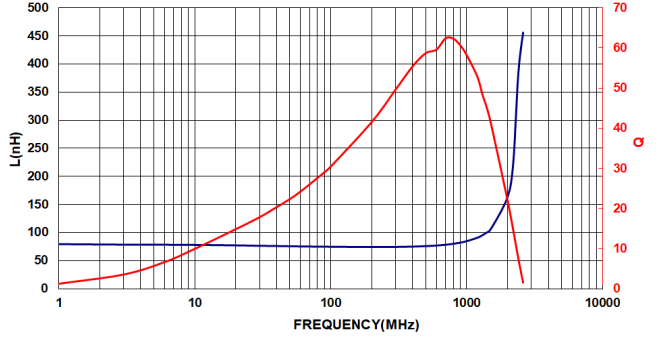
# BWHP00161008 Series Specification

AEC-Q200

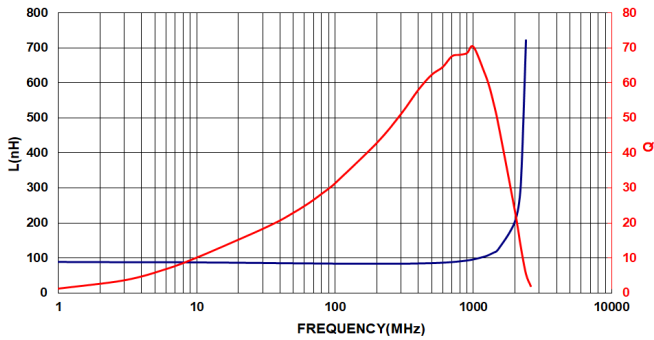
BWHP0016100872N□00



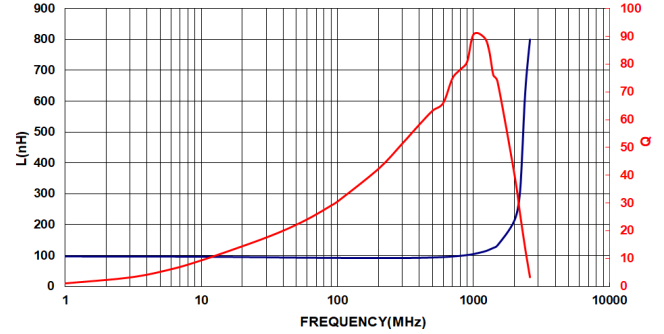
BWHP0016100875N□00



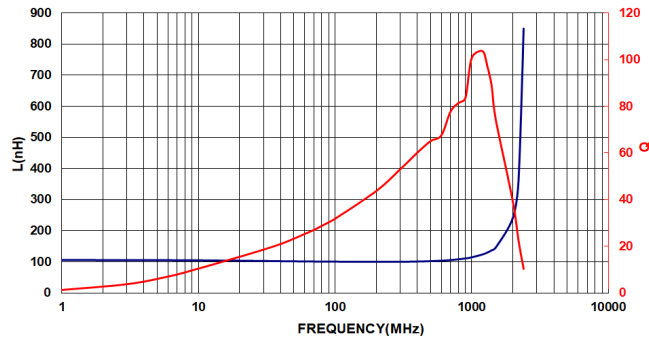
BWHP0016100882N□00



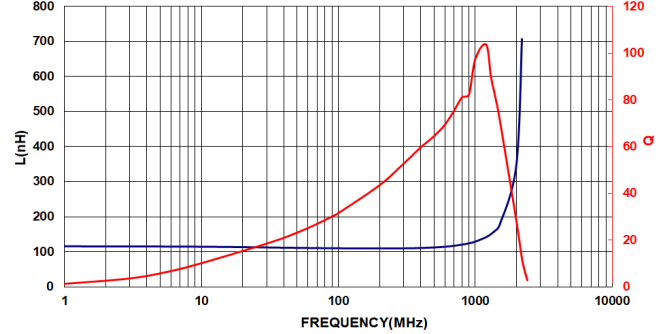
BWHP0016100891N□00



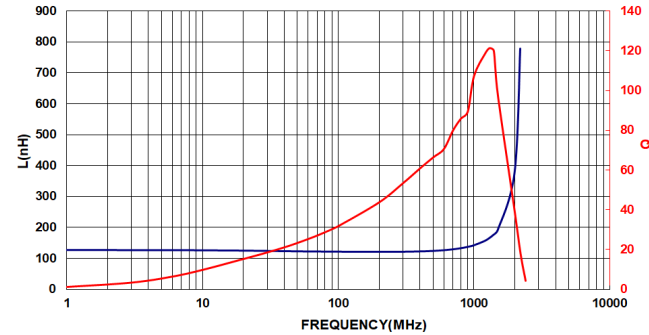
BWHP00161008R10□00



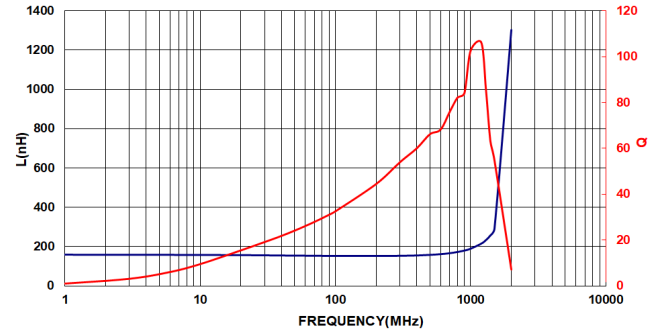
BWHP00161008R11□00



BWHP00161008R12□00

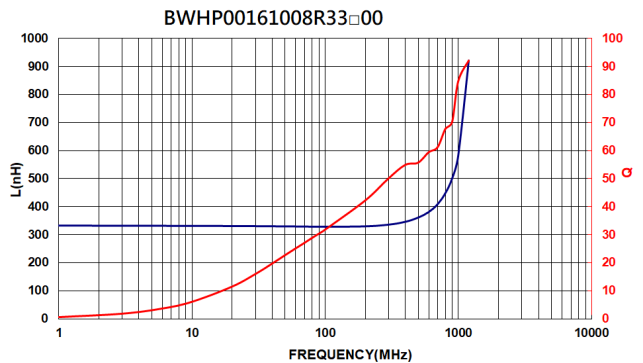
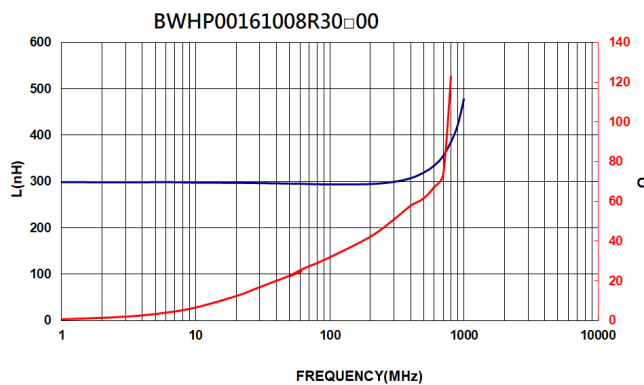
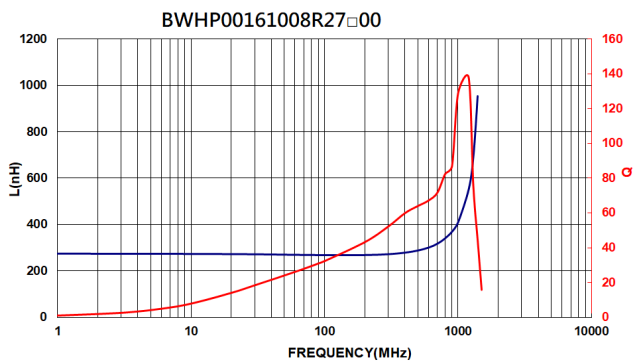
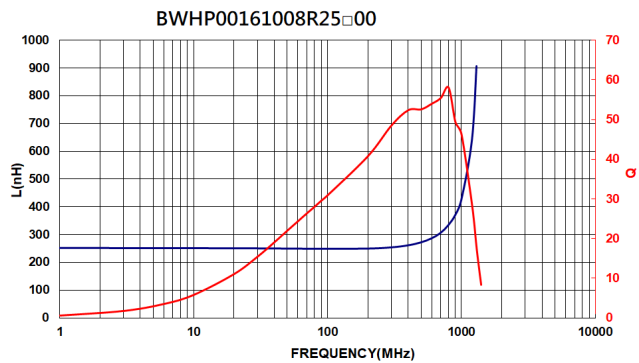
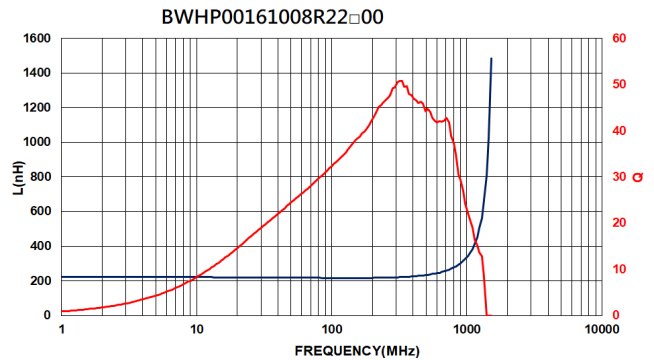
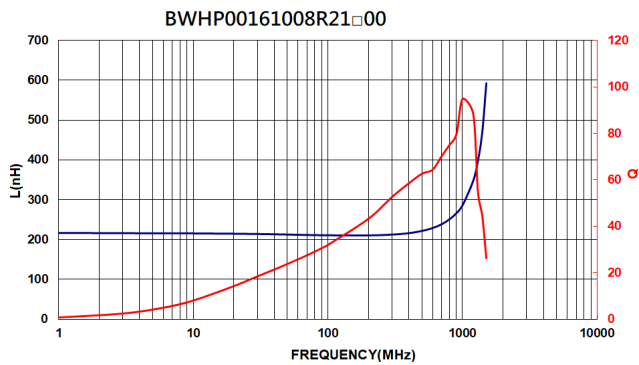
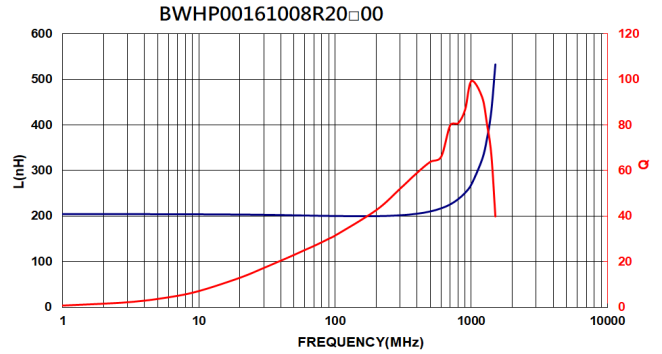
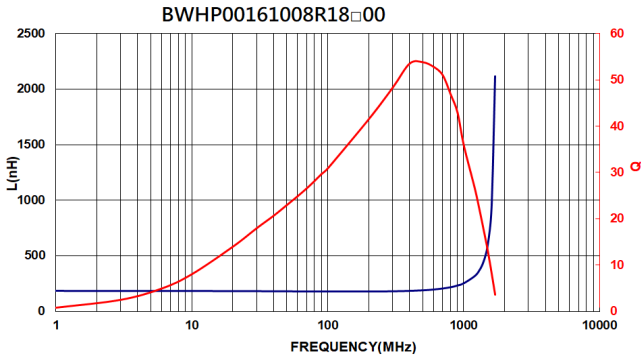


BWHP00161008R15□00



# BWHP00161008 Series Specification

AEC-Q200



# BWHP00161008 Series Specification

AEC-Q200

