

# RF Inductor



## BWQC 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. Low DC resistance, high current capacity, and high impedance characteristics
2. Excellent solder heat resistance
3. Both flow and reflow soldering methods can be employed

### Applications

1. NB, PC
2. Disk drives and computer peripherals
3. Pagers, cordless phone
4. DC power supply circuit

### Product Information

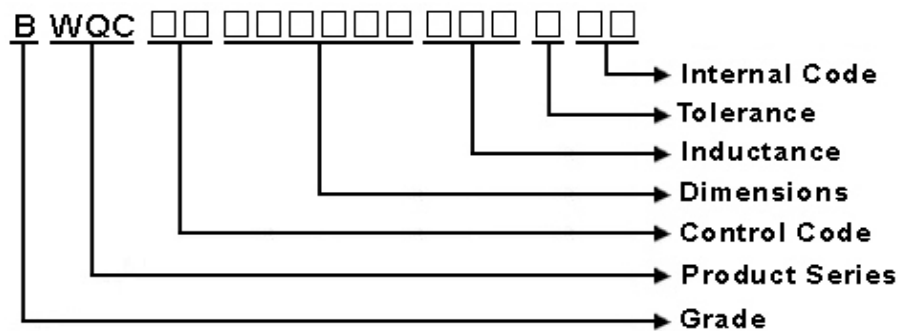
Series	Size Code (JIS/EIA)	Inductance (nH)
BWQC	3225/1210 4532/1812	0.15 ~ 1500



## BWQC00322520 Series Specification

**1 Scope:** This specification applies to CHIP COIL

**2 Part Numbering:**



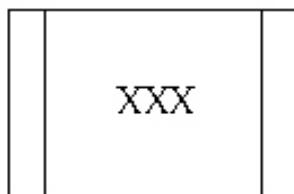
**3 Rating:**

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

Storage Temperature: - 4 0 °C ~ 1 0 5 °C

(The storage temperature range is for after the assembly)

**4 Marking:**



**Ex Marking : 4R7**

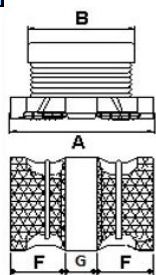
**Marking color : Black**

**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

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### 6 Configuration and Dimensions:



Dimensions in mm

TYPE	322520
A	3.2±0.3
B	2.5±0.2
C	2.0±0.2
D	2.5±0.2
E	2.5±0.2
F	1.05±0.3
G	1.1±0.2

Net Weight (grms)

SIZE CODE	Net Weight (grms)
322520	0.05765 (typ).

### 7 Electrical Characteristics:

Part No.	Inductance (uH)	Test Freq.	SRF (MHz)Min.	RDC (Ω)±30%	Rated Current (A)	Tolerance	Marking
BWQC00322520R47□00	0.47	0.1V 1MHz	150	0.042	1.1	20	R47
BWQC003225201R0□00	1.0	0.1V 1MHz	96	0.09	1.0	20	1R0
BWQC003225202R2□00	2.2	0.1V 1MHz	64	0.13	0.6	20	2R2
BWQC003225202R7□00	2.7	0.1V 1MHz	60	0.15	0.6	5,10,20	2R7
BWQC003225203R3□00	3.3	0.1V 1MHz	60	0.15	0.6	10,20	3R3
BWQC003225203R9□00	3.9	0.1V 1MHz	50	0.16	0.5	20	3R9
BWQC003225204R7□00	4.7	0.1V 1MHz	43	0.20	0.45	20	4R7
BWQC003225206R8□00	6.8	0.1V 1MHz	30	0.26	0.40	20	6R8
BWQC00322520100□00	10	0.1V 1MHz	26	0.44	0.30	10,20	100
BWQC00322520150□00	15	0.1V 1MHz	22	0.55	0.35	10,20	150
BWQC00322520220□00	22	0.1V 1MHz	19	0.71	0.25	10,20	220
BWQC00322520270□00	27	0.1V 1MHz	15	0.9	0.23	10,20	270
BWQC00322520330□00	33	0.1V 1MHz	15	1.1	0.20	10,20	330
BWQC00322520470□00	47	0.1V 1MHz	15	1.3	0.17	10,20	470
BWQC00322520560□00	56	0.1V 1MHz	12	2.3	0.15	10,20	560
BWQC00322520101□00	100	0.1V 1MHz	10	3.5	0.10	10,20	101
BWQC00322520151□00	150	0.1V 1MHz	7.0	6.0	0.08	5,10,20	151
BWQC00322520221□00	220	0.1V 1MHz	6.0	8.4	0.07	5,10,20	221
BWQC00322520271□00	270	0.1V 1MHz	6.0	10	0.065	10,20	271
BWQC00322520331□00	330	0.1V 1MHz	5.6	10	0.06	5,10,20	331
BWQC00322520391□00	390	0.1V 1MHz	5.0	17	0.06	10,20	391
BWQC00322520471□00	470	0.1V 1kHz	3.0	19	0.06	10,20	471
BWQC00322520561□00	560	0.1V 1kHz	3.0	22	0.06	5,10,20	561

NOTE: □-tolerance J=±5% / K=±10% / M=±20%

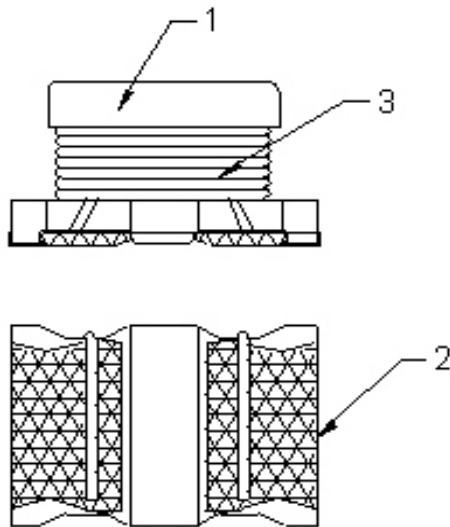
1.Operating temperature range - 4 0℃ ~ 1 2 5℃(Including self - temperature rise)

2.Rated Current: Self temperature rise shall be limited to 35℃ Max.Inductance drop 10% typ.

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#### 8.1 Construction:



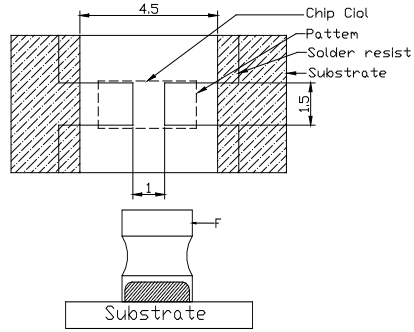
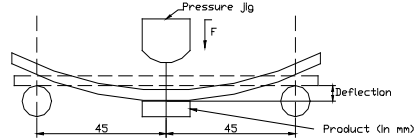
#### 8.2 Material List:

NO	Part	Material
1	Core	Ferrite
2	Terminal	Ag/Ni/Sn
3	Wire	Copper(180°C)

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### 9 Reliability Of Ferrite Wire Wound Chip Coil

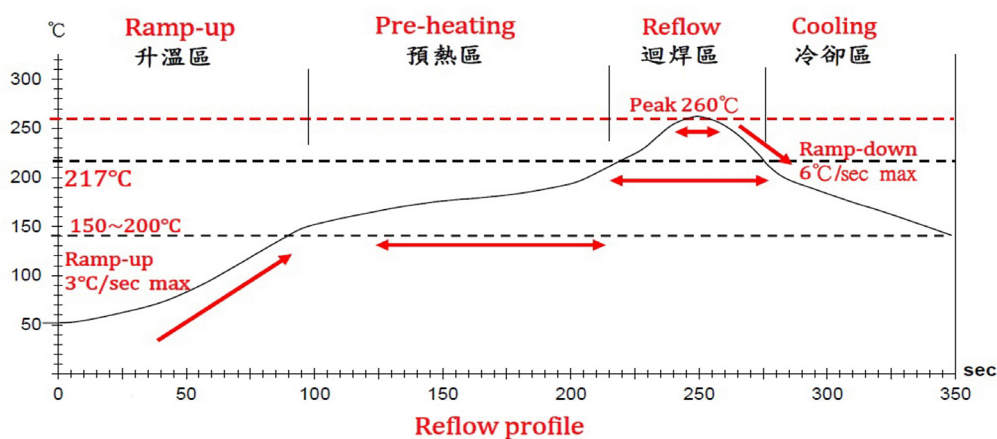
#### 1-1. Mechanical Performance

No	Item	Specification	Test Method
1-1-1	Shear Test	Chip coil shall not be damaged after tested as test method	<p>Substrate: Glass-epoxy substrate</p>  <p>Solder: Sn/Ag3.0/Cu0.5 Applied Direction:</p> <p>Force : 10N Hold Duration: 5s±1s</p>
1-1-2	Bending Test		<p>Substrate: Glass-epoxy substrate (100mm*40mm*1.6mm) speed of Applying Force: 1mm/s Deflection: 2mm Hold Duration: 30s</p> 
1-1-3	Vibration		<p>Oscillation Frequency: 10Hz to 55 Hz to 10 hZ for 1 min Total Amplitude: 1.5mm Testing Time: A period of 2 hours in each of 3 mutually perpendicular directions (Total 6 hours)</p>
1-1-4	Solderability	The wetting area of the electrode shall be at least 95% covered with new solder coating	<p>Solder: Sn/Ag3.0/Cu0.5 per-Heating: 150°C±10°C/1min to 2min solder Temperature: 245°C±5°C Immersion Time: 4s±1s</p>
1-1-5	Resistance to Soldering Heat	Appearance: No damage	<p>Solder: Sn/Ag3.0/Cu0.5 per-Heating: 150°C±10°C/1min to 2min solder Temperature: 260°C±5°C Immersion Time: 10s±1s</p>
1-1-6	Resistance to solvent	There must be no change in appearance or obliteration of marking.	Inductors must withstand 6 minutes of alcohol or water.

#### 1-2. Environmental Performance

Environmental Performance			Test Method	
No	Item	Specification		
1-2-1	Heat Resistance	Appearance: No damage Inductance Change: within±10%	Temperature:85℃±3℃ Time:1000h Then measured after exposure in the room Condition for 24h±2h	
1-2-2	Cold Resistance		Temperature: -40℃±3℃ Time:1000h Then measured after exposure in the room Condition for 24h±2h	
1-2-3	Humidity		Temperature: 40℃±2℃ Humidity:90%(RH) to 95%(RH) Time:1000h Then measures after exposure in the room Condition for 24h±2h	
1-2-4	Temperature Cycle		One cycle:	
			Step	Temperature (℃)
			1	-40±3
			2	25±2
			3	125±3
			4	25±2
			Total: 100cycles Measured after exposure in the room condition for 24hrs	

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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 :**

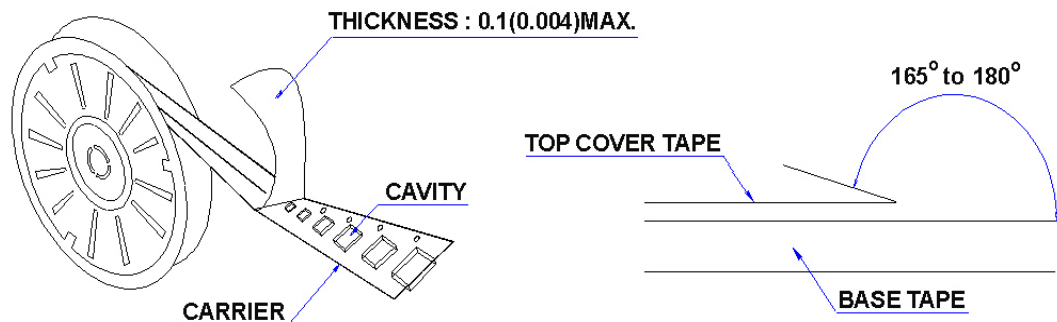
1. Re-flow possible times : within 2 times
2. Nitrogen adopted is recommended while in re-flow
3. Products can only be soldered with reflow

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### 10 Packaging:

#### 10.1 Packaging -Cover Tape

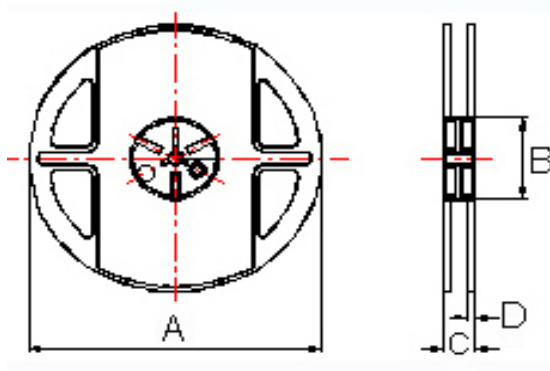
The force for tearing off cover tape is 10 to 100 grams in the arrow direction.



#### 10.2 Packaging Quantity

TYPE	PCS/REEL
322520	2000

#### 10.3 Reel Dimensions



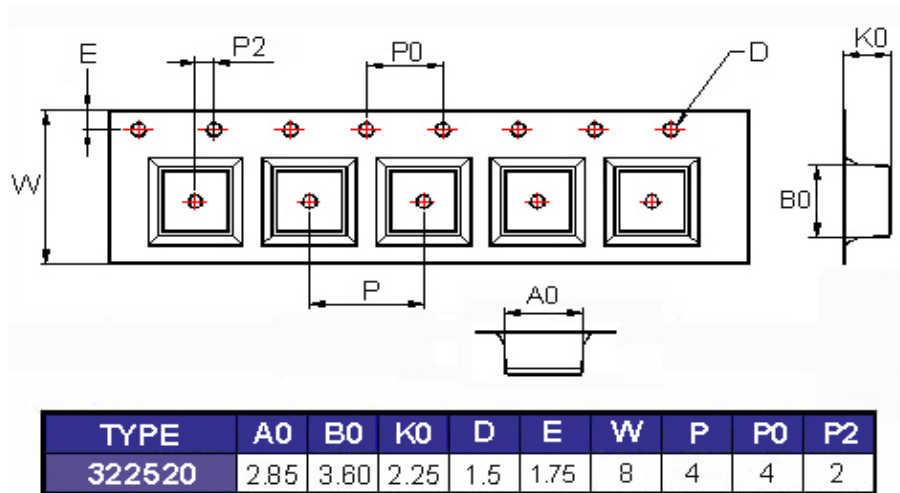
Dimensions in mm

TYPE	A	B	C	D
322520	178	60	9	1.5

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### 10 Packaging:

#### 10.4 Tape Dimensions in mm



### 11 Recommended Land Pattern:



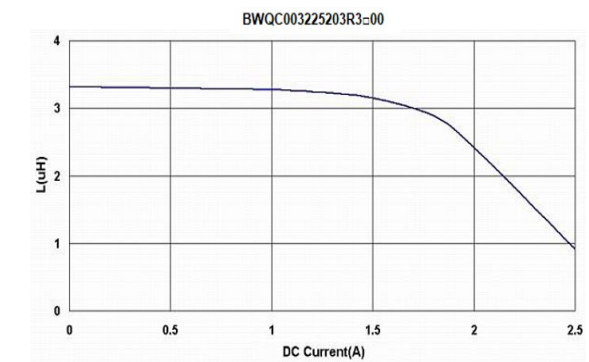
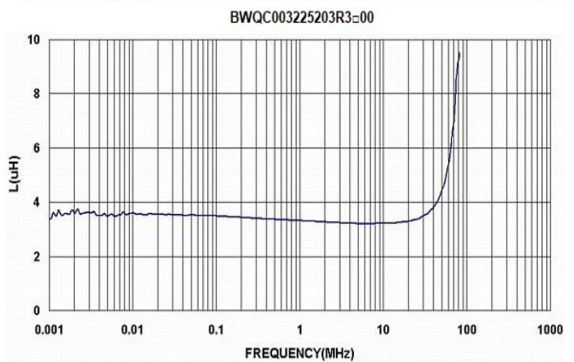
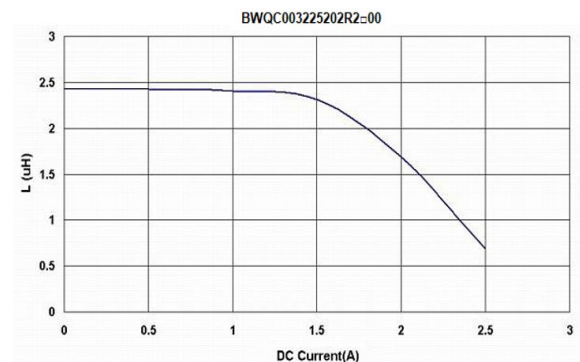
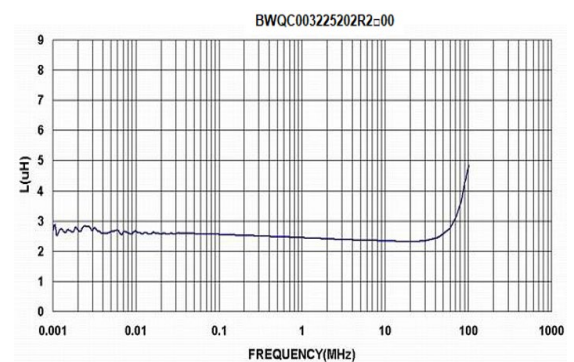
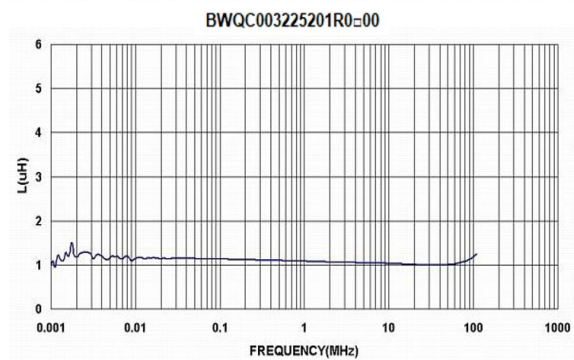
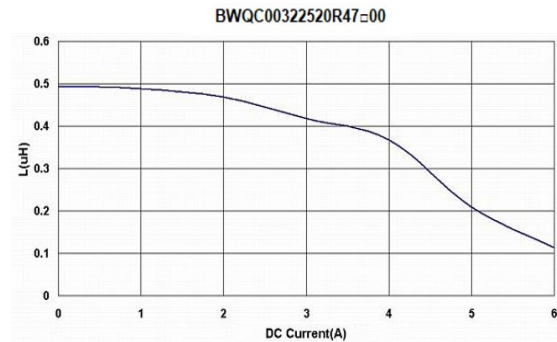
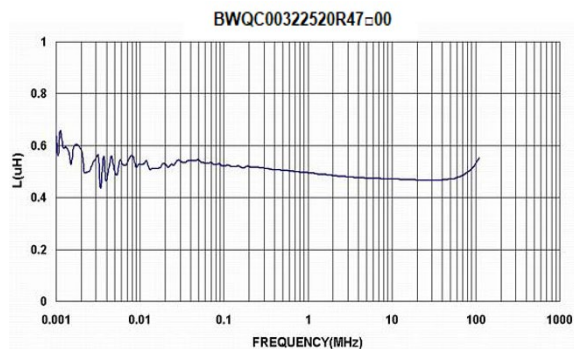
### 12 Note:

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.

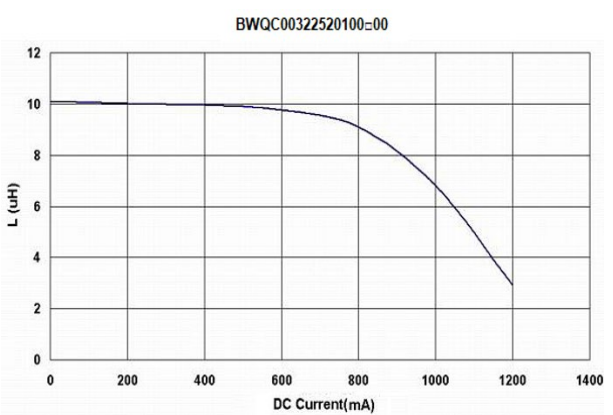
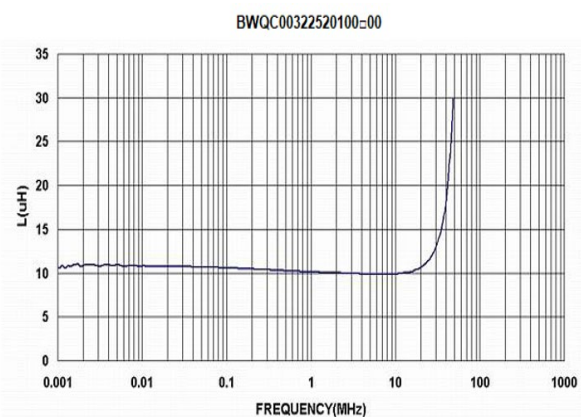
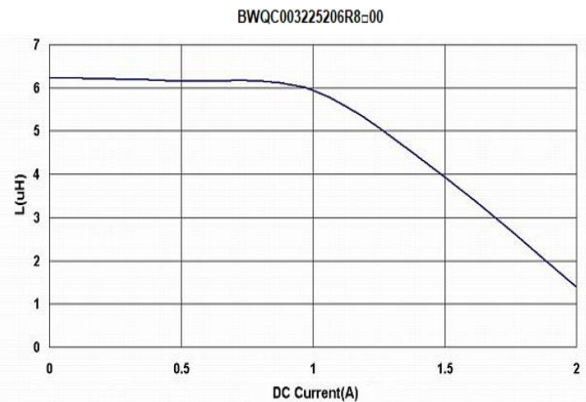
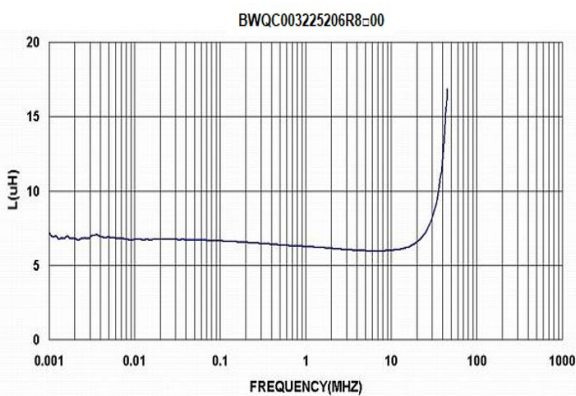
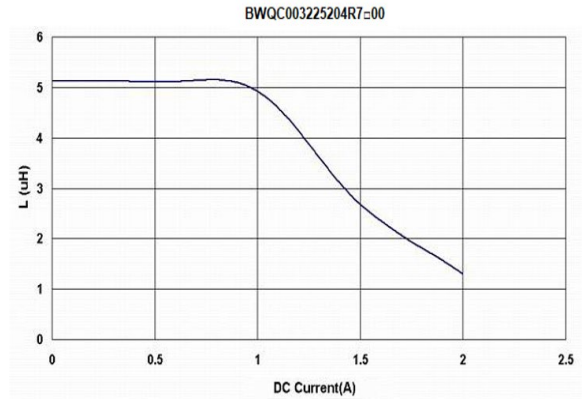
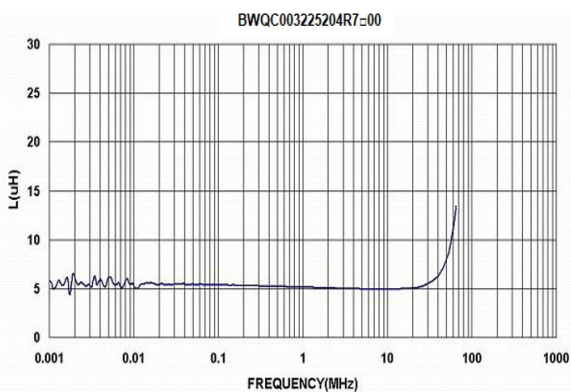
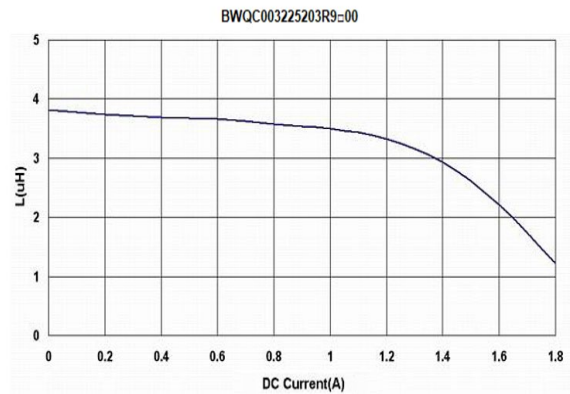
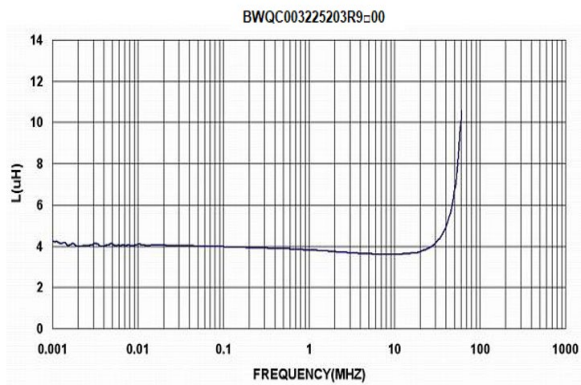


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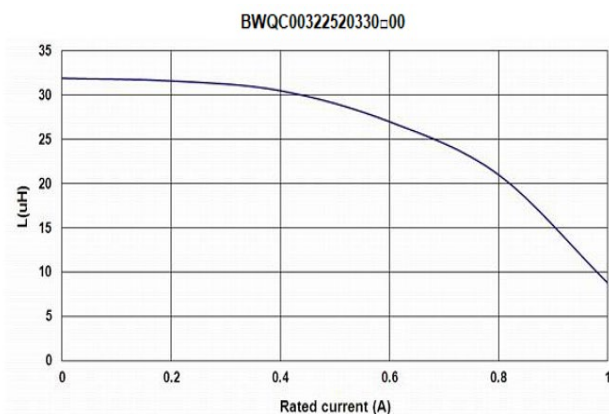
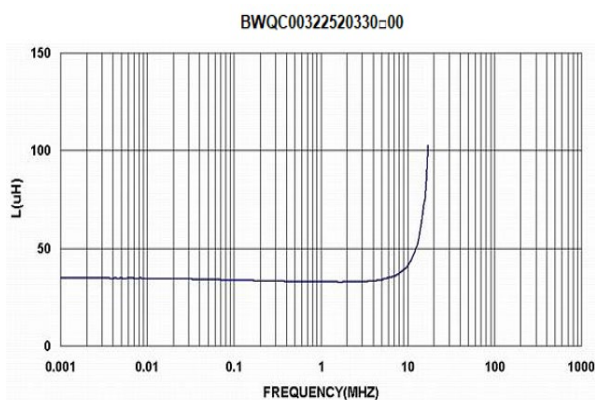
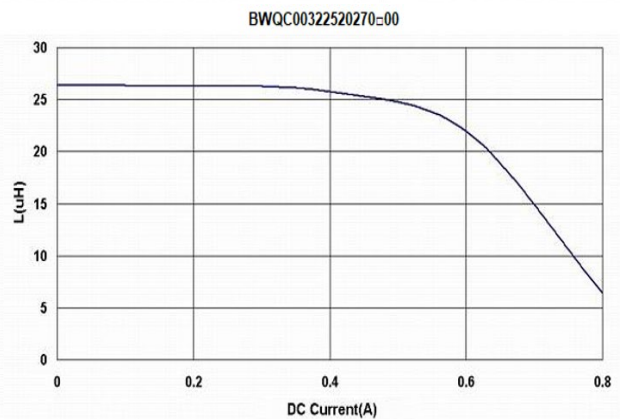
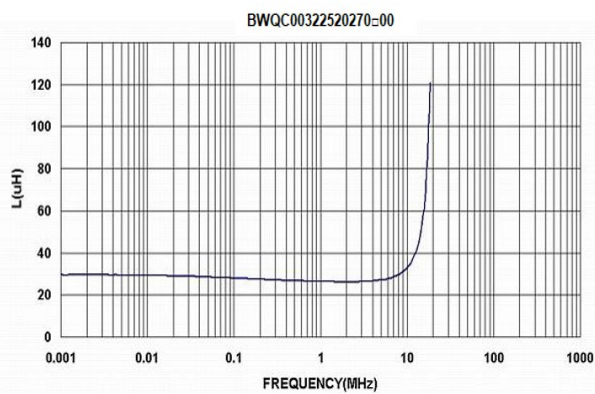
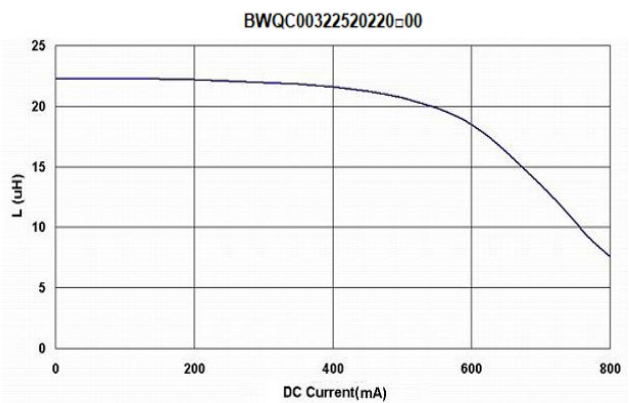
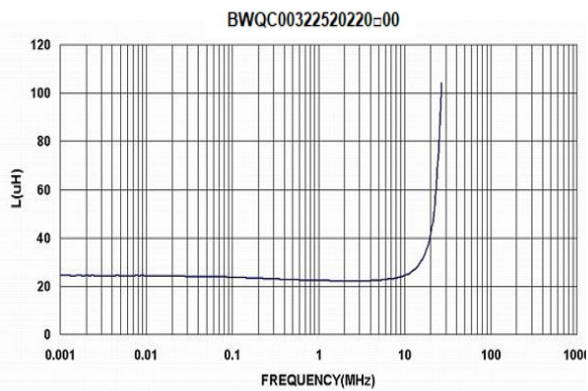
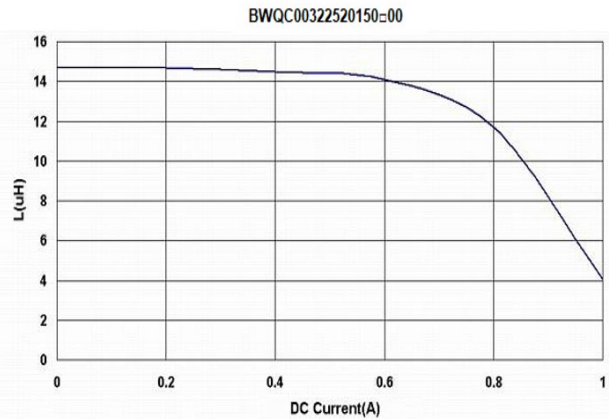
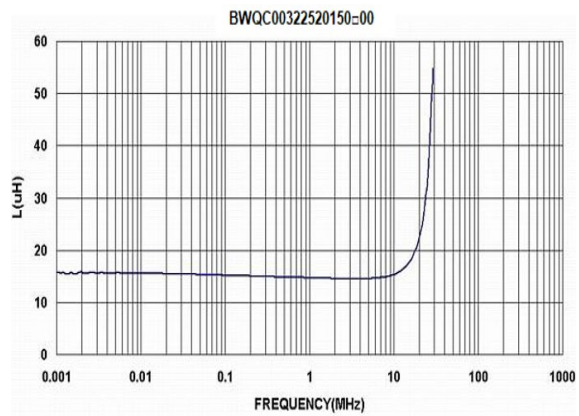
### 13 Graph: BWQC00322520 Series Graph



## BWQC00322520 Series Specification

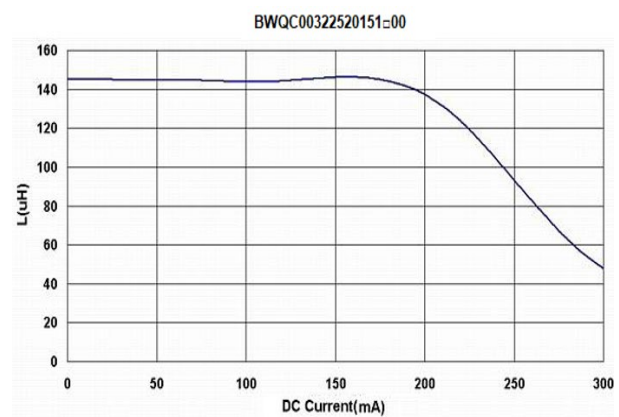
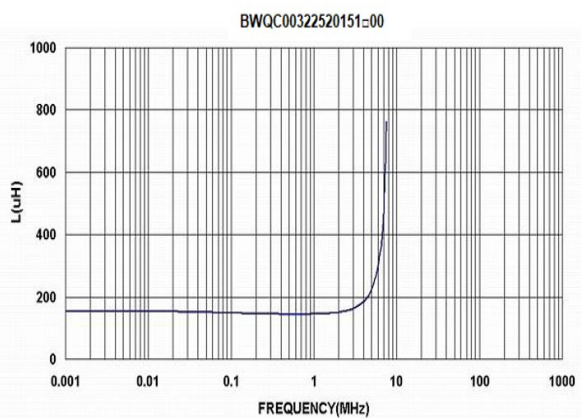
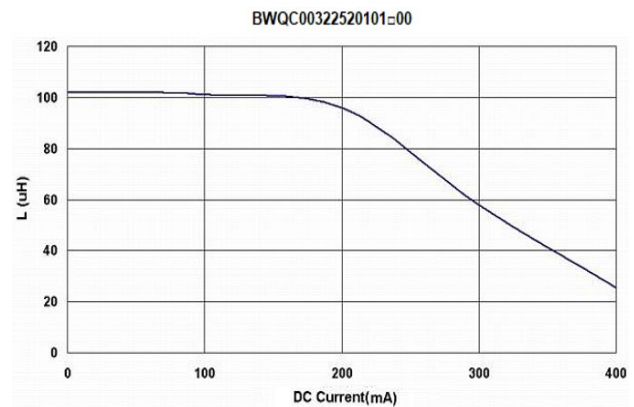
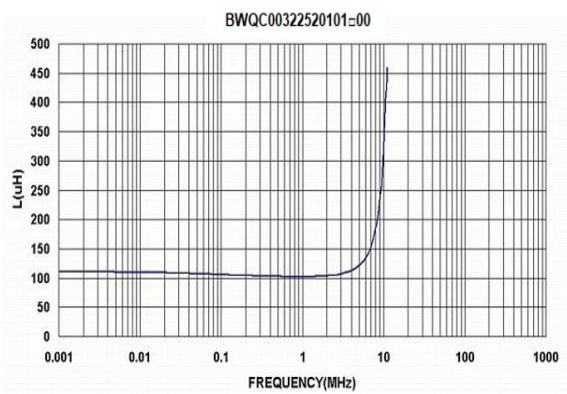
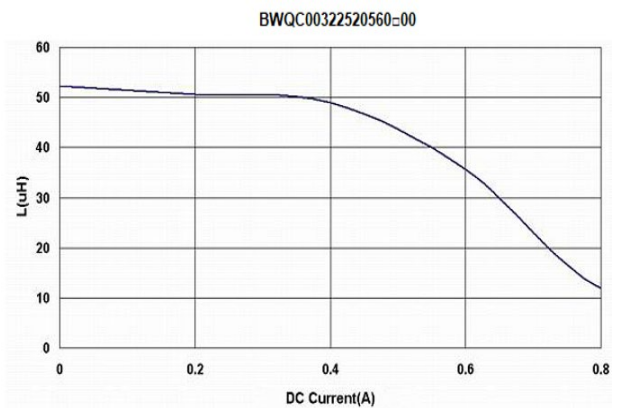
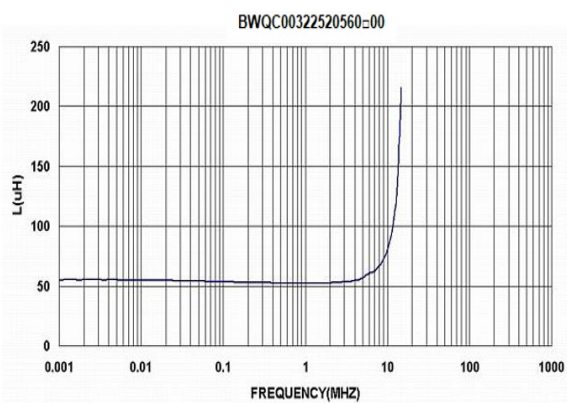
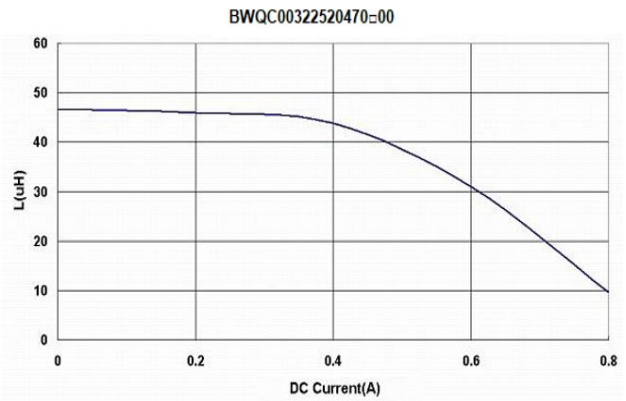
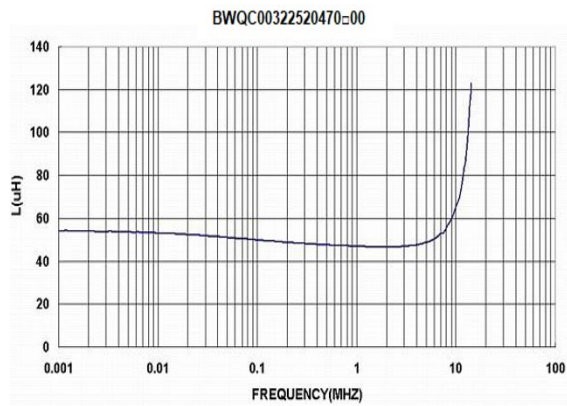


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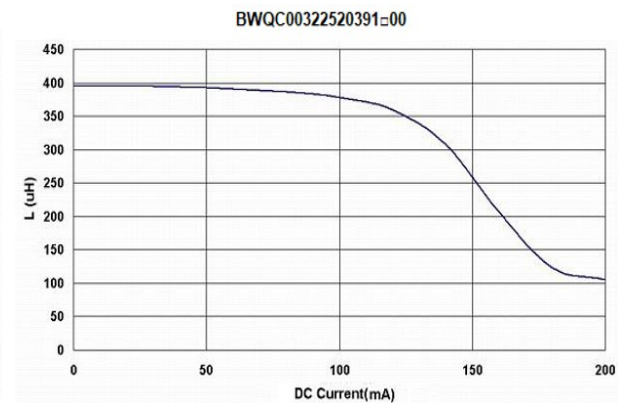
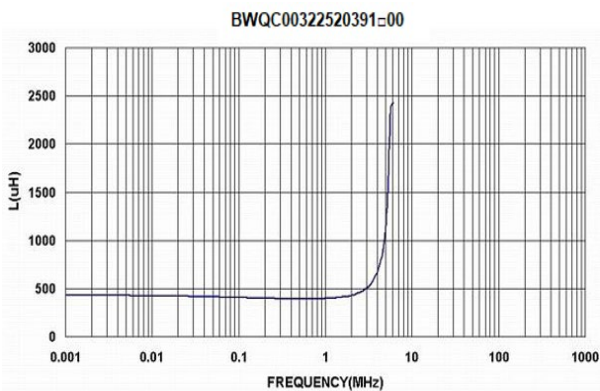
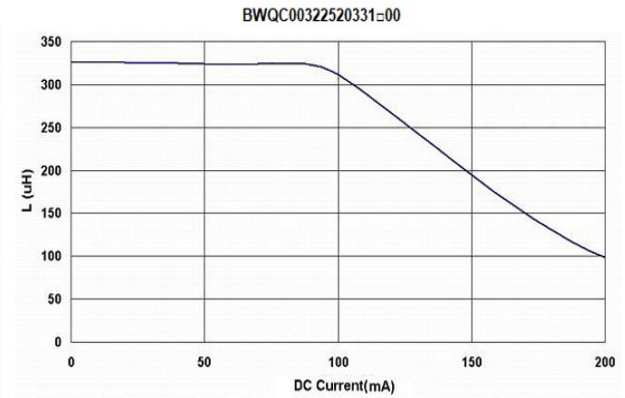
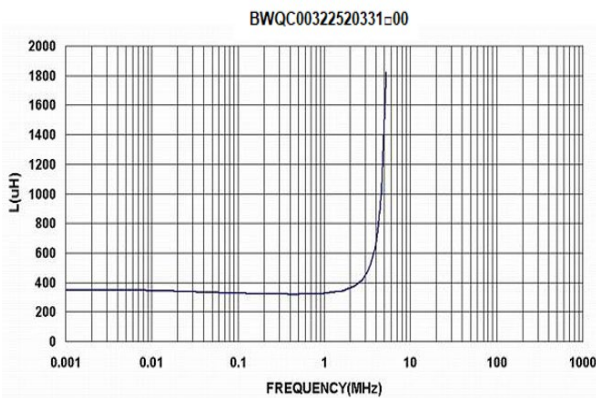
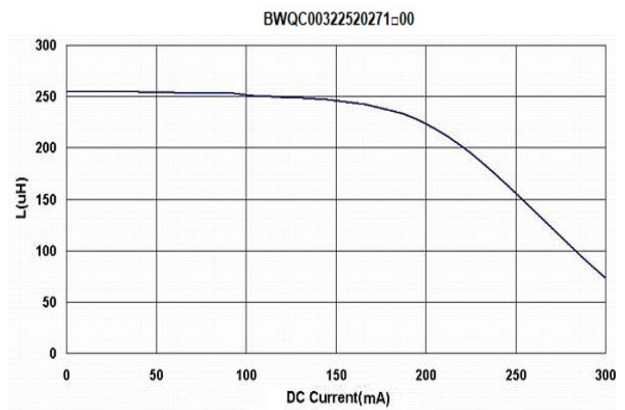
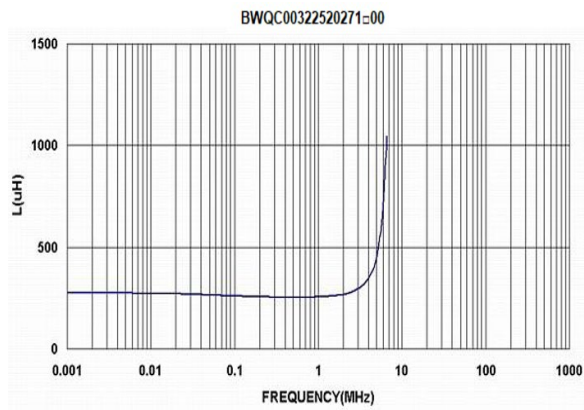
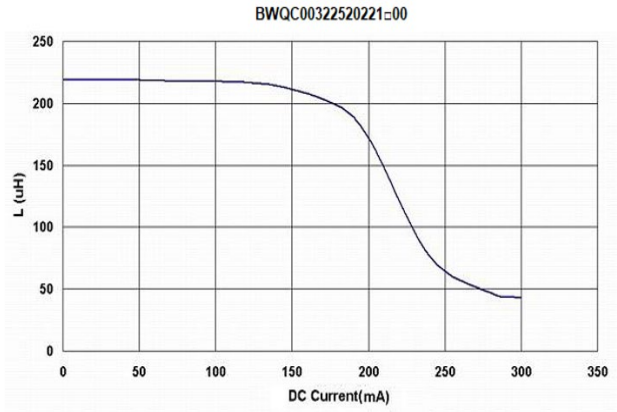
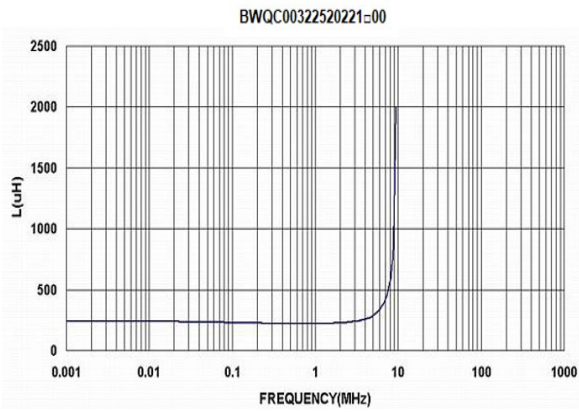




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