RF Inductor

BWQV 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 value at high frequencies and low DC resistance
2. Wide inductance range
3. Excellent solder heat resistance

Applications

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

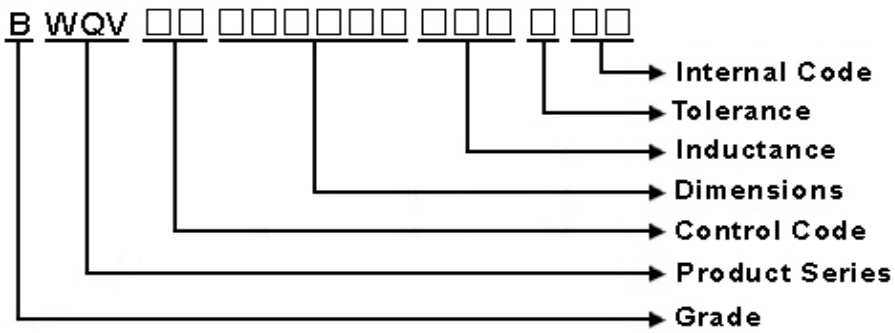
Product Information

Series	Size Code (JIS/EIA)	Inductance (nH)
BWQV	3225/1210 4532/1812	0.47 ~ 2200

BWQV00453226 Series Specification

1 Scope: This specification applies to CHIP COIL

2 Part Numbering:



3 Rating:

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

Storage Temperature: -40℃~105℃

(The storage temperature range is for after the assembly)

4 Marking:

Ex Marking : 221

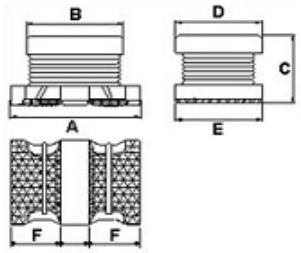
Marking color : Black

5 Standard Testing Condition

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

BWQV00453226 Series Specification

6 Configuration and Dimensions:



Dimensions in mm

TYPE	453226
A	4.5±0.3
B	3.6±0.2
C	2.6±0.2
D	3.2±0.2
E	3.2±0.2
F	1.45±0.3

Net Weight (grms)

SIZE CODE	Net Weight (grms)
453226	0.12 (typ).

7 Electrical Characteristics:

Part No.	Inductance (uH)	L/Q Test Freq.	Q Min.	SRF (MHz)Min.	RDC (Ω)Max.	Rated Current (A)	Tolerance	Marking
BWQV004532261R0□00	1.0	1MHz/1MHz	20	120	0.2	0.5	20	1R0
BWQV004532261R2□00	1.2	1MHz/1MHz	20	100	0.2	0.5	20	1R2
BWQV004532261R5□00	1.5	1MHz/1MHz	20	85	0.3	0.5	20	1R5
BWQV004532261R8□00	1.8	1MHz/1MHz	20	75	0.3	0.5	20	1R8
BWQV004532262R2□00	2.2	1MHz/1MHz	20	62	0.3	0.5	20	2R2
BWQV004532262R7□00	2.7	1MHz/1MHz	20	53	0.32	0.5	20	2R7
BWQV004532263R3□00	3.3	1MHz/1MHz	20	47	0.35	0.5	20	3R3
BWQV004532263R9□00	3.9	1MHz/1MHz	20	41	0.38	0.5	20	3R9
BWQV004532264R7□00	4.7	1MHz/1MHz	30	38	0.40	0.5	10,20	4R7
BWQV004532265R6□00	5.6	1MHz/1MHz	30	33	0.47	0.5	10,20	5R6
BWQV004532266R8□00	6.8	1MHz/1MHz	30	31	0.5	0.45	10,20	6R8
BWQV004532268R2□00	8.2	1MHz/1MHz	30	27	0.56	0.45	10,20	8R2
BWQV00453226100□00	10	1MHz/1MHz	35	23	0.56	0.4	10,20	100
BWQV00453226120□00	12	1MHz/1MHz	35	21	0.62	0.38	10,20	120
BWQV00453226150□00	15	1MHz/1MHz	35	19	0.73	0.36	5,10,20	150
BWQV00453226180□00	18	1MHz/1MHz	35	17	0.82	0.34	10,20	180
BWQV00453226220□00	22	1MHz/1MHz	35	15	0.94	0.32	5,10,20	220
BWQV00453226270□00	27	1MHz/1MHz	35	14	1.1	0.3	5,10,20	270
BWQV00453226330□00	33	1MHz/1MHz	35	12	1.2	0.27	10,20	330
BWQV00453226390□00	39	1MHz/1MHz	35	11	1.4	0.24	5,10,20	390
BWQV00453226470□00	47	1MHz/1MHz	35	10	1.5	0.22	5,10,20	470
BWQV00453226560□00	56	1MHz/1MHz	35	9.3	1.7	0.20	10,20	560
BWQV00453226680□00	68	1MHz/1MHz	35	8.4	1.9	0.18	5,10,20	680
BWQV00453226820□00	82	1MHz/1MHz	35	7.5	2.2	0.17	10,20	820
BWQV00453226101□00	100	1MHz/0.796MHz	40	6.8	2.5	0.16	5,10,20	101

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

1.Operating temperature range -40℃~125℃(Including self-temperature rise)

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

3.L/Q Test OSC @1V

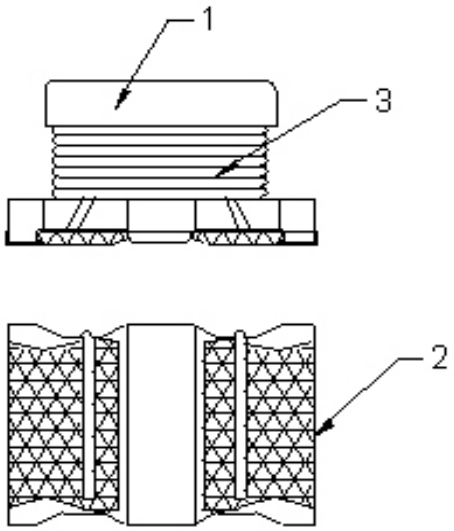
BWQV00453226 Series Specification

Part No.	Inductance (uH)	L/Q Test Freq.	Q Min.	SRF (MHz)Min.	RDC (Ω)Max.	Rated Current (A)	Tolerance	Marking
BWQV00453226121□00	120	1MHz/0.796MHz	40	6.2	3	0.15	10,20	121
BWQV00453226151□00	150	1MHz/0.796MHz	40	5.5	3.7	0.13	10,20	151
BWQV00453226181□00	180	1MHz/0.796MHz	40	5	4.5	0.12	10,20	181
BWQV00453226221□00	220	1MHz/0.796MHz	40	4.5	5.4	0.11	5,10,20	221
BWQV00453226271□00	270	1MHz/0.796MHz	40	4	6.8	0.1	5,10,20	271
BWQV00453226331□00	330	1MHz/0.796MHz	40	3.6	8.2	0.095	10,20	331
BWQV00453226391□00	390	1MHz/0.796MHz	40	3.3	9.7	0.09	5,10,20	391
BWQV00453226471□00	470	1kHz/0.796MHz	40	3	11.8	0.08	5,10,20	471
BWQV00453226561□00	560	1kHz/0.796MHz	40	2.7	14.5	0.07	5,10,20	561
BWQV00453226681□00	680	1kHz/0.796MHz	40	2.5	17.5	0.065	5,10,20	681
BWQV00453226821□00	820	1kHz/0.796MHz	40	2.2	20.5	0.06	10,20	821
BWQV00453226102□00	1000	1kHz/0.252MHz	40	2	25	0.05	5,10,20	102
BWQV00453226122□00	1200	1kHz/0.252MHz	40	1.8	30	0.045	5,10,20	122
BWQV00453226152□00	1500	1kHz/0.252MHz	40	1.6	37	0.04	10,20	152
BWQV00453226182□00	1800	1kHz/0.252MHz	40	1.5	45	0.035	10,20	182
BWQV00453226222□00	2200	1kHz/0.252MHz	40	1.3	50	0.03	5,10,20	222

BWQV00453226 Series Specification

8 BWQV00453226 Series

8.1 Construction:



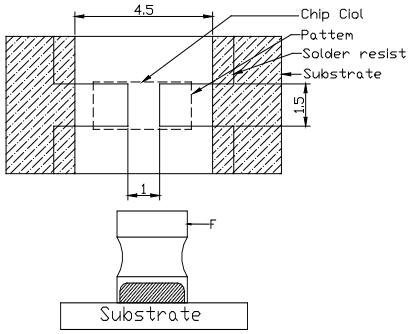
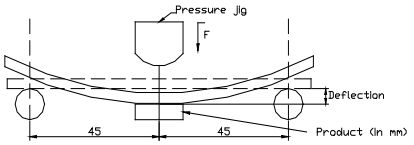
8.2 Material List:

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

BWQV00453226 Series Specification

9 Reliability Of Ferrite Wire Wound Chip Coil

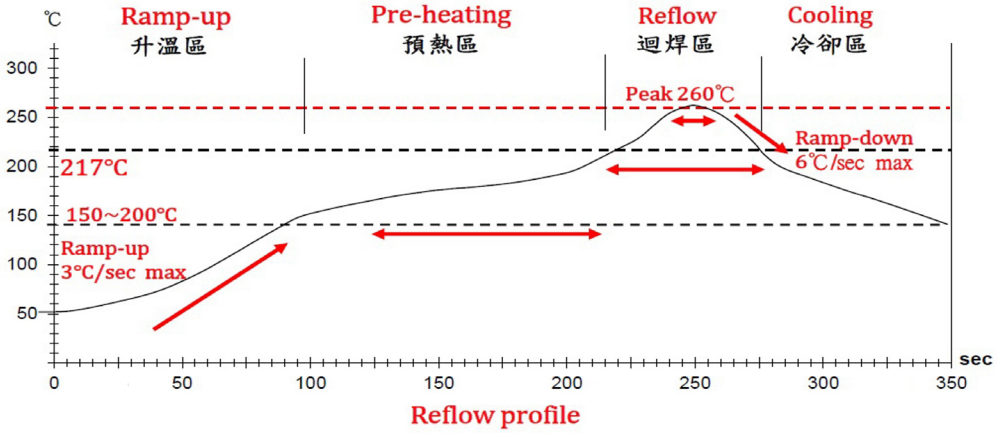
1-1.Mechanical Performance

No	Item	Specification	Test Method
1-1-1	Shear Test	Chip coil shall not be damaged after tested as test method	Substrate: Glass-epoxy substrate  Solder:Sn/Ag3.0/Cu0.5 Applied Direction: Force : 10N Hold Duration:5s±1s
1-1-2	Bending Test		Substrate:Glass-epoxy substrate(100mm*40mm*1.6mm) speed of Applying Force:1mm/s Deflection:2mm Hold Duration:30s 
1-1-3	Vibration		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)
1-1-4	Solderability	The wetting area of the electrode shall be at least 95% covered with new solder coating	Solder:Sn/Ag3.0/Cu0.5 per-Heating:150℃±10℃/1min to 2min solder Temperature:245℃±5℃ Immersion Time:4s±1s
1-1-5	Resistance to Soldering Heat	Appearance:No damage	Solder:Sn/Ag3.0/Cu0.5 per-Heating:150℃±10℃/1min to 2min solder Temperature:260℃±5℃ Immersion Time:10s±1s
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

No	Item	Specification	Test Method
1-2-1	Heat Resistance	Appearance: No damage Inductance Change:within±10% Q change : within±30%	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 (℃) / Time (min) 1 / -40±3 / 30 2 / 25±2 / 3 3 / 125±3 / 30 4 / 25±2 / 3 Total: 100cycles Measured after exposure in the room condition for 24hrs

BWQV00453226 Series Specification



Reflow profile

Lead-Free(LF)標準溫度分析範圍 **Refer to J-STD-020C**

管制項目 Item.	升溫區 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℃	150℃ ~ 200℃	Above 217℃	260±5℃	Peak Temp.~150℃
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 :

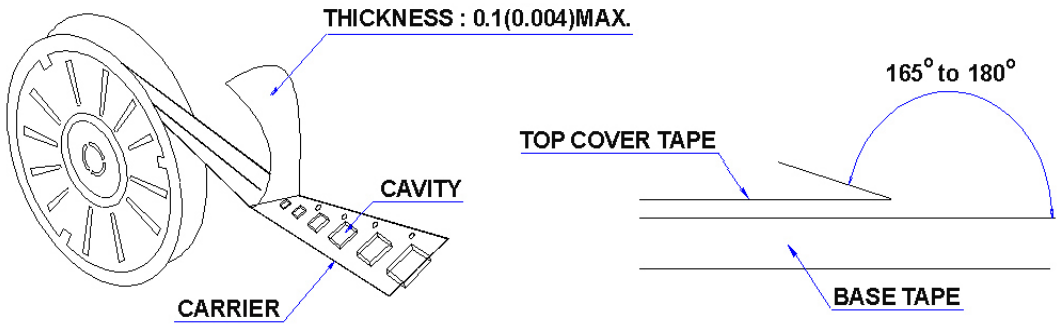
1. Re-flow possible times : within 2 times
2. Nitrogen adopted is recommended while in re-flow
3. Products can only be soldered with reflow

BWQV00453226 Series Specification

10 Packaging:

10.1 Packaging -Cover Tape

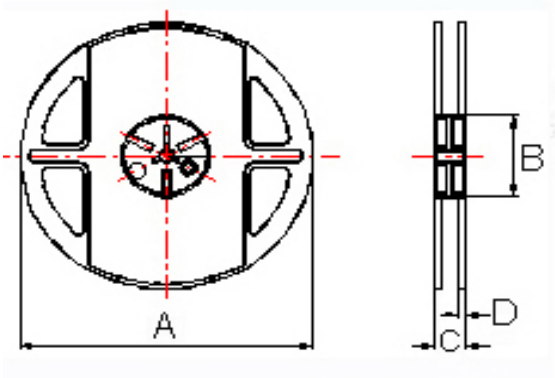
The force for tearing off cover tape is 10 to 130 grams in the arrow direction.



10.2 Packaging Quantity

TYPE	PCS/REEL
453226	500

10.3 Reel Dimensions



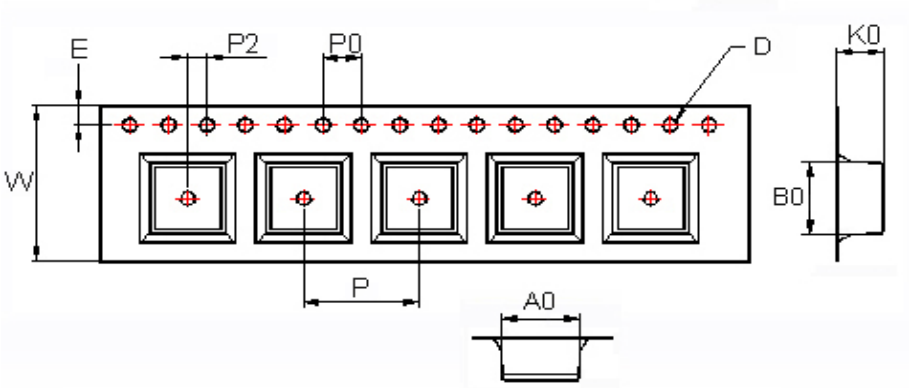
Dimensions in mm

TYPE	A	B	C	D
453226	178	60	13.2	1.5

BWQV00453226 Series Specification

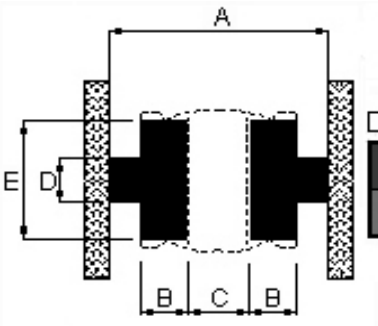
10 Packaging:

10.4 Tape Dimensions in mm



TYPE	A0	B0	K0	D	E	W	P	P0	P2
453226	3.6	4.9	3	1.5	1.75	12	8	4	2

11 Recommended Land Pattern:



Dimensions in mm

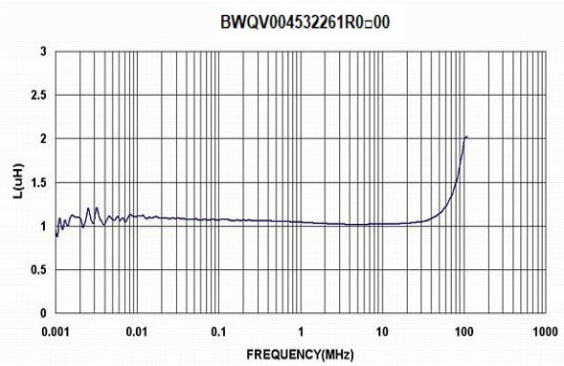
TYPE	A(in/mm)	B(in/mm)	C(in/mm)	D(in/mm)	E(in/mm)
453226	0.295/7.5	0.059/1.5	0.059/1.5	0.059/1.5	0.118/3.0

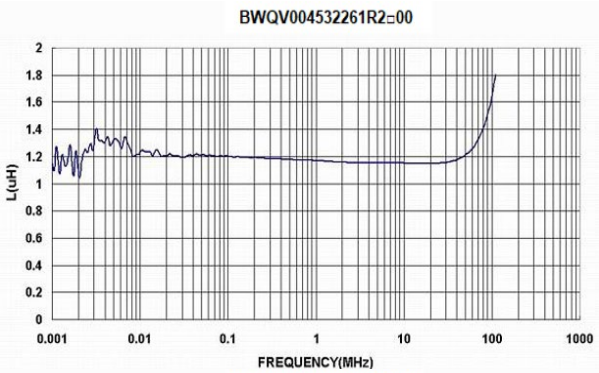
12 Note:

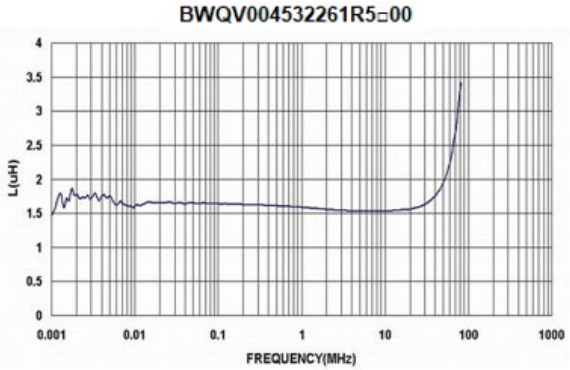
1. Please make sure that your product has been evaluated and confirmed against your specifications when our product is mounted to your product.
2. Do not knock nor drop.
3. All the items and parameters in this product specification have been prescribed on the premise that our product is used for the 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.

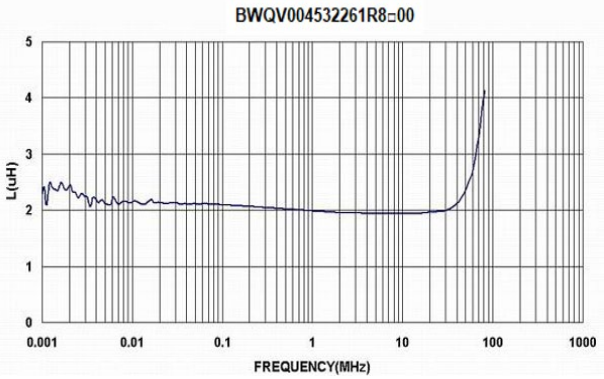
BWQV00453226 Series Specification

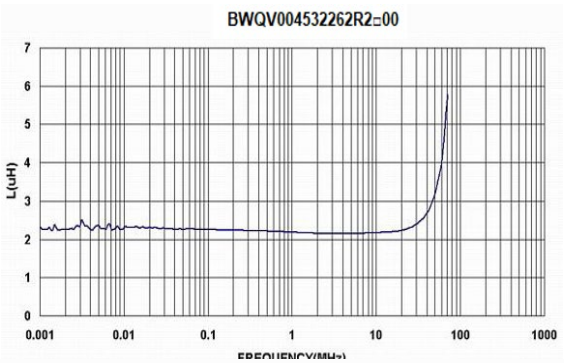
13 Graph: BWQV00453226 Series Graph

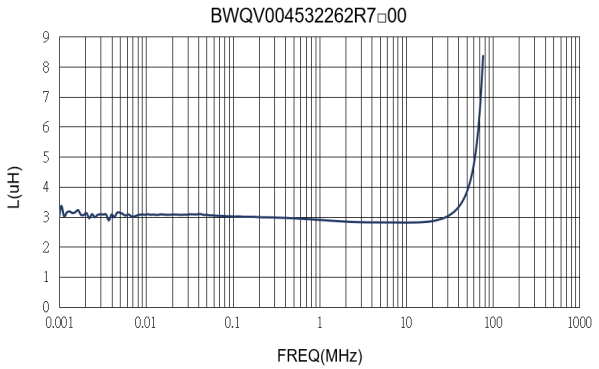


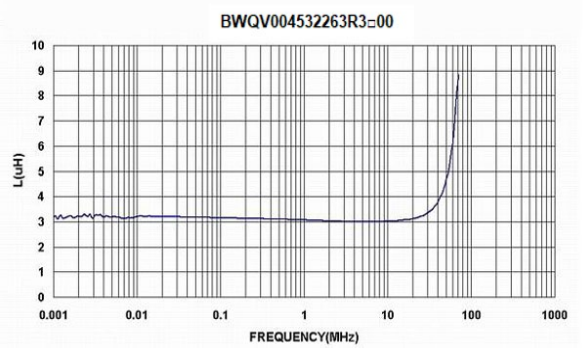


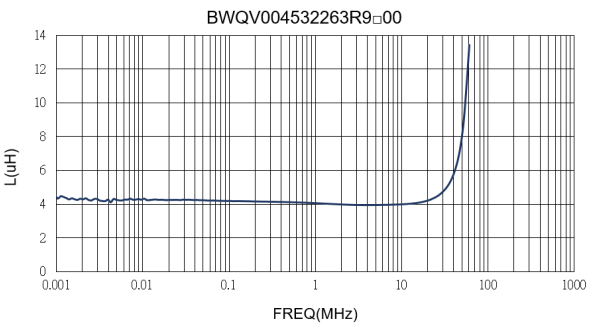




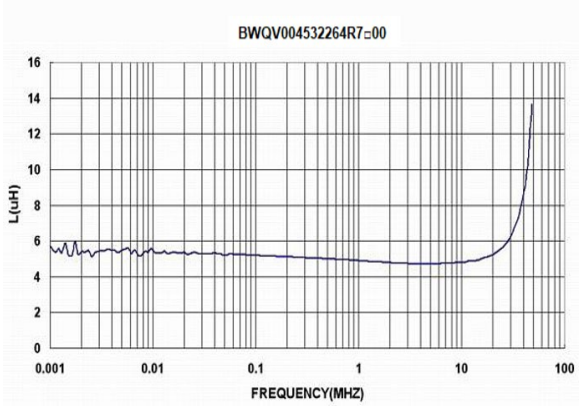


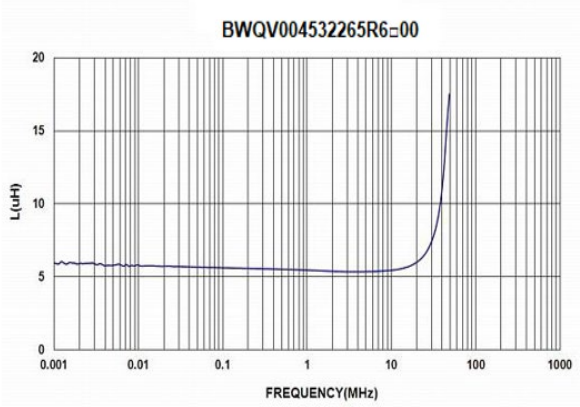


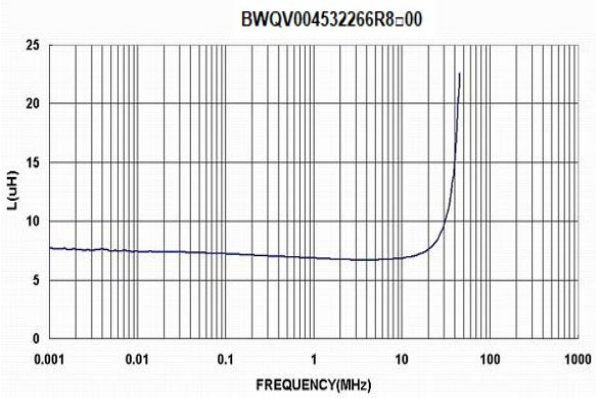


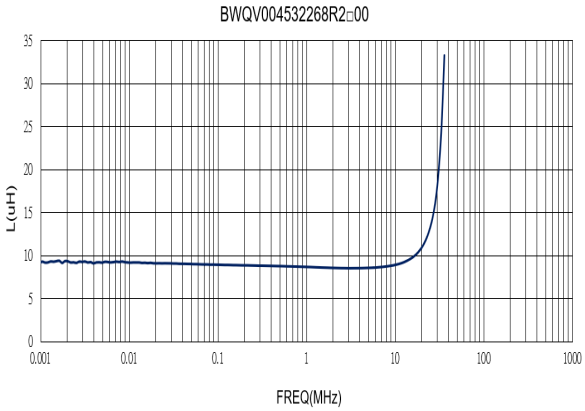


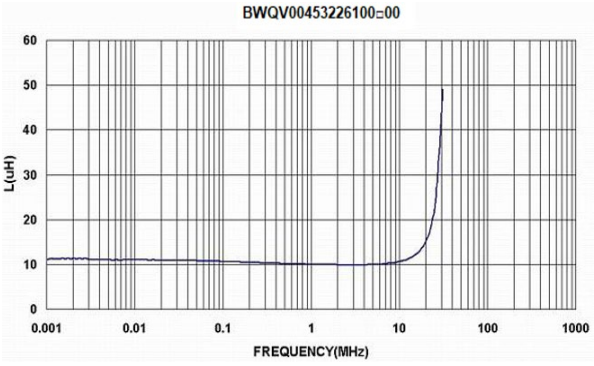
BWQV00453226 Series Specification

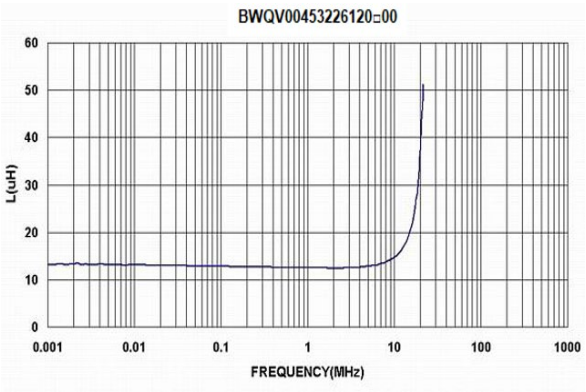


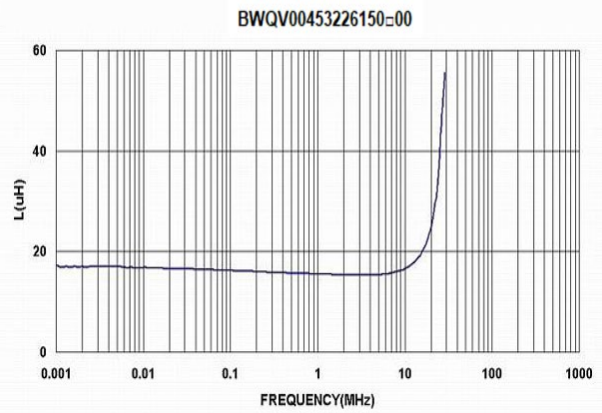


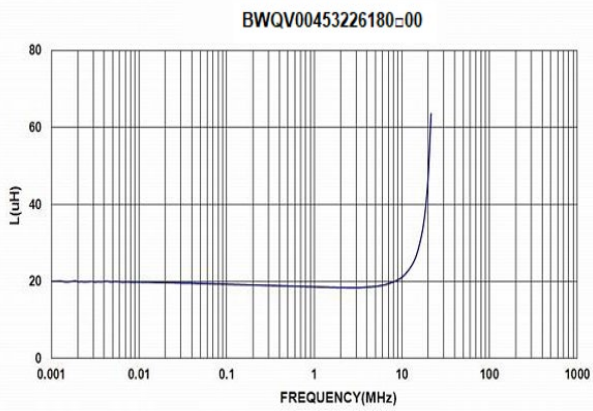












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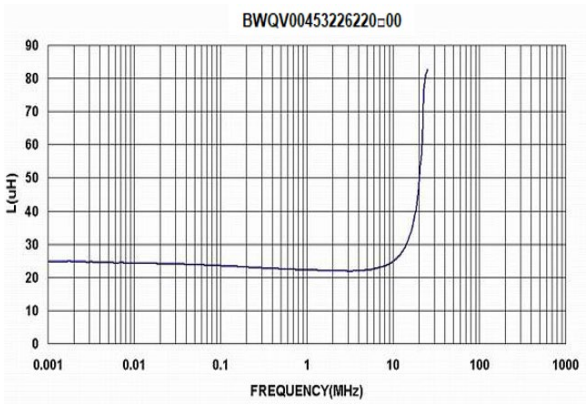

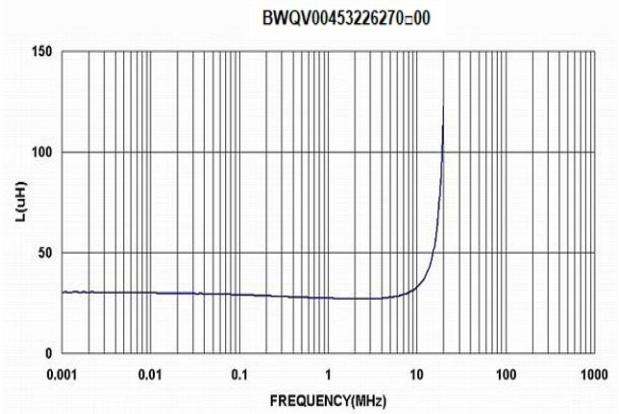

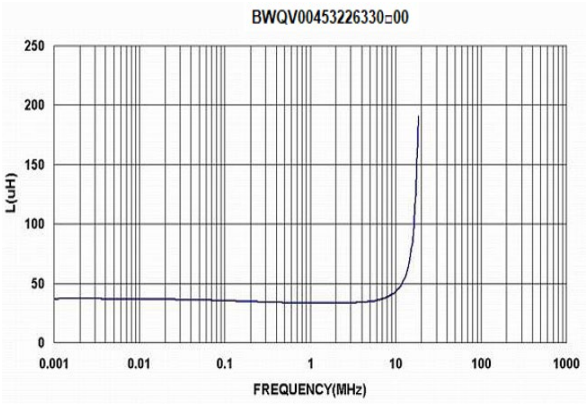

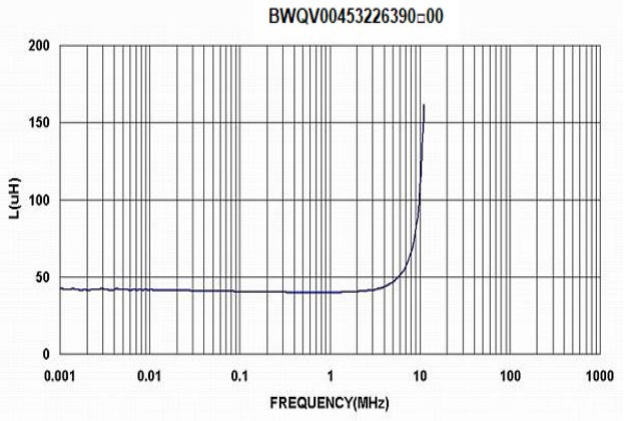

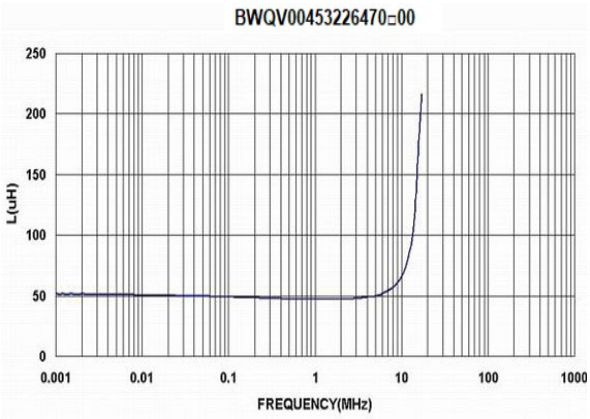

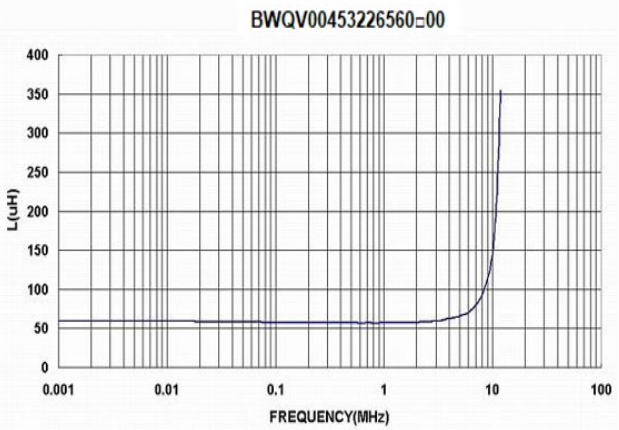

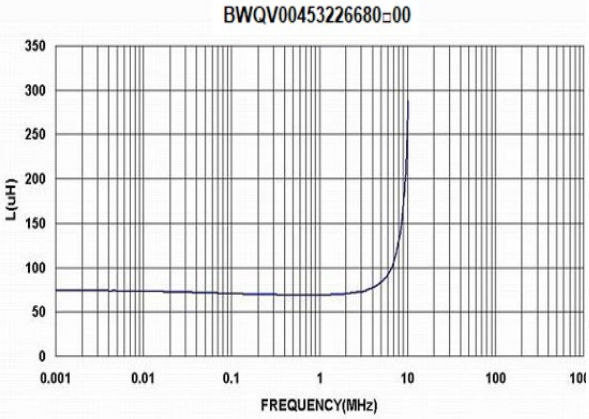

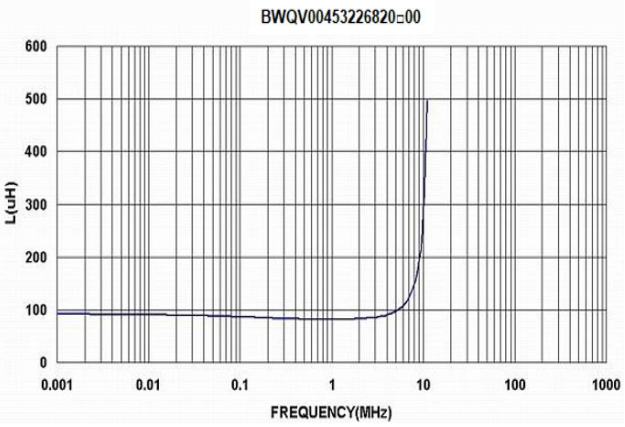

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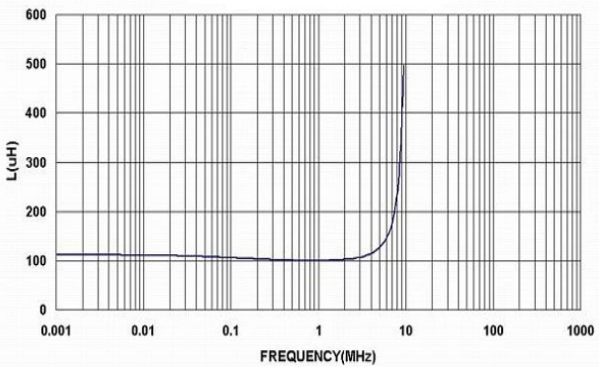

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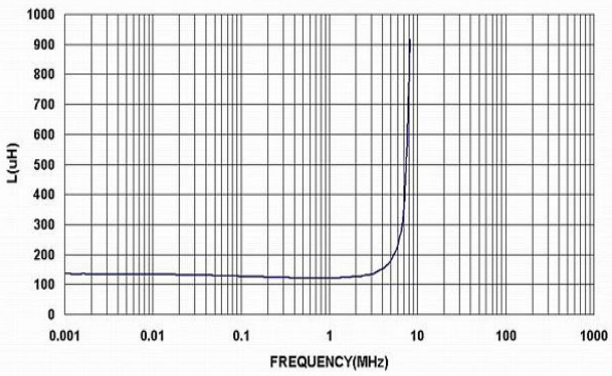

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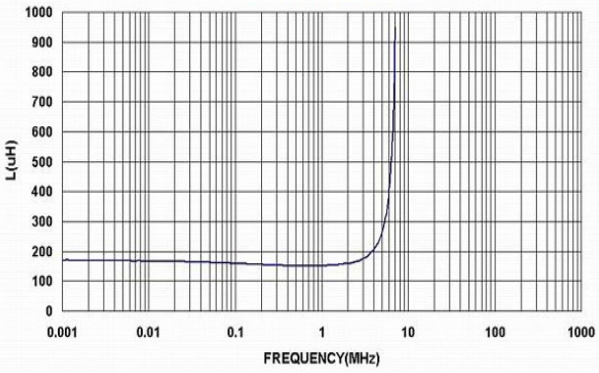

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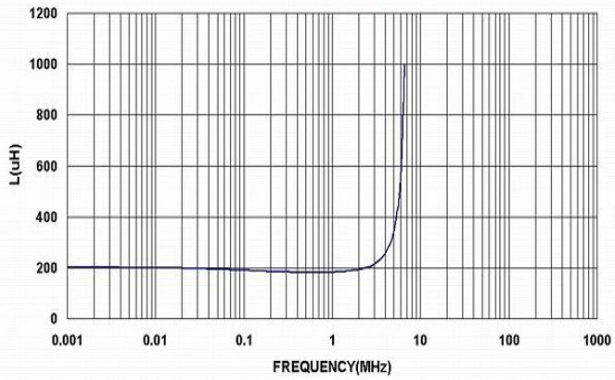

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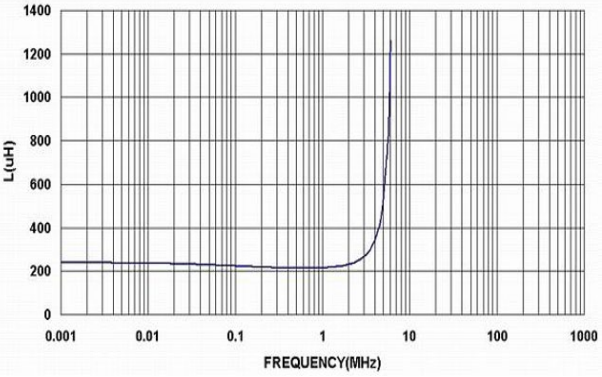

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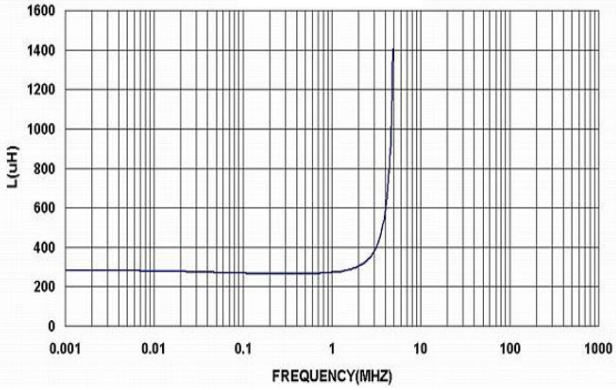

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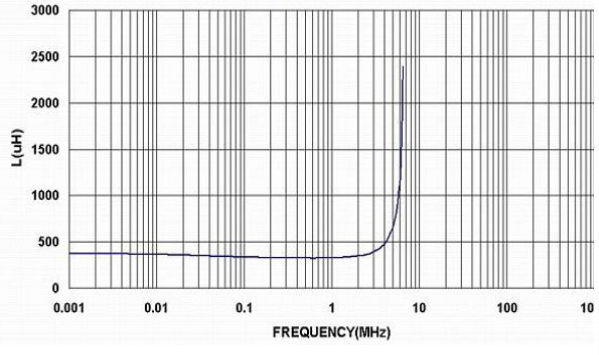

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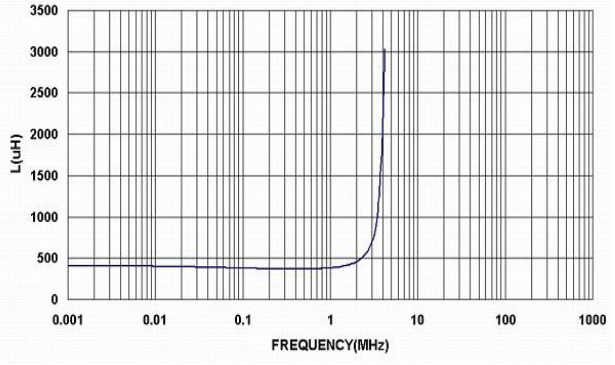

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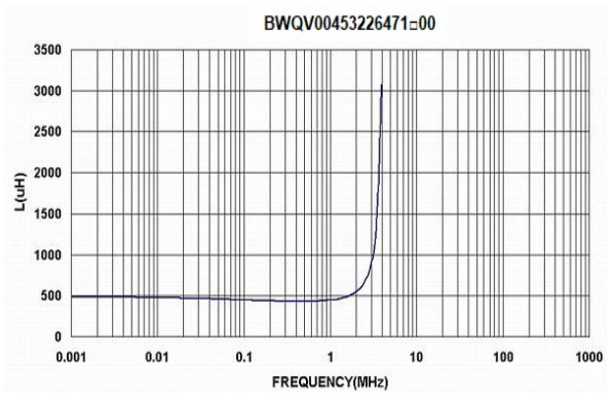

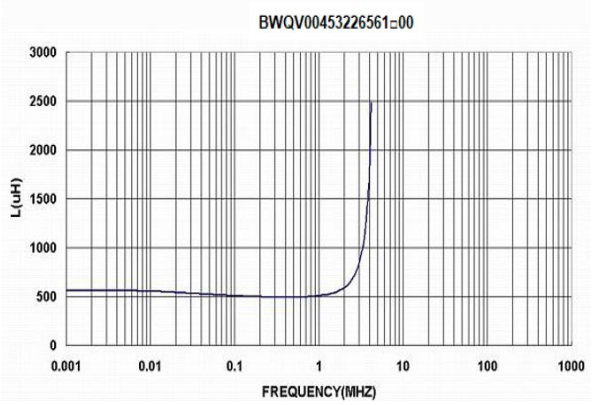

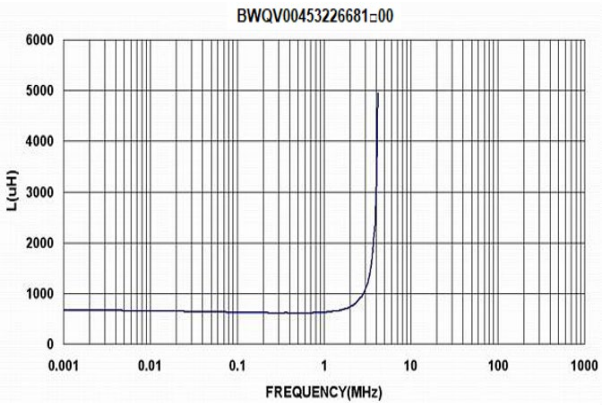

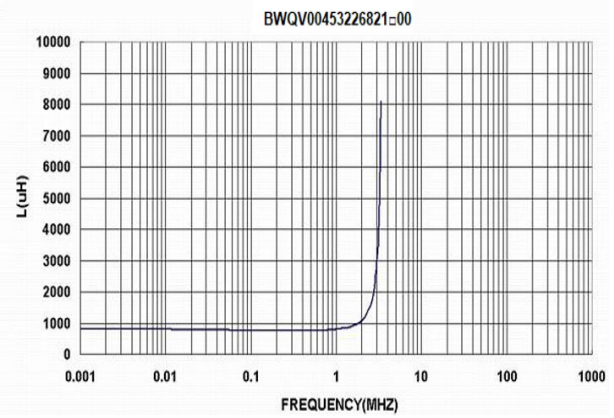

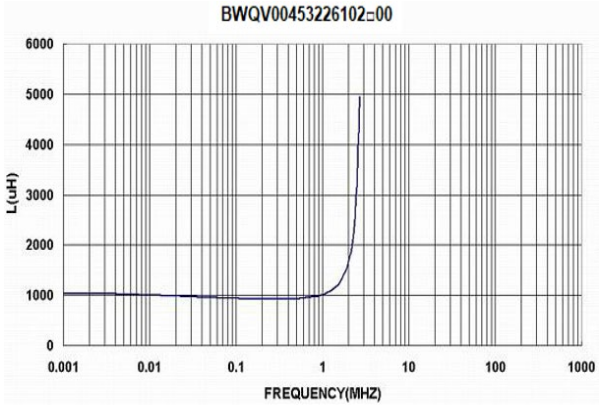

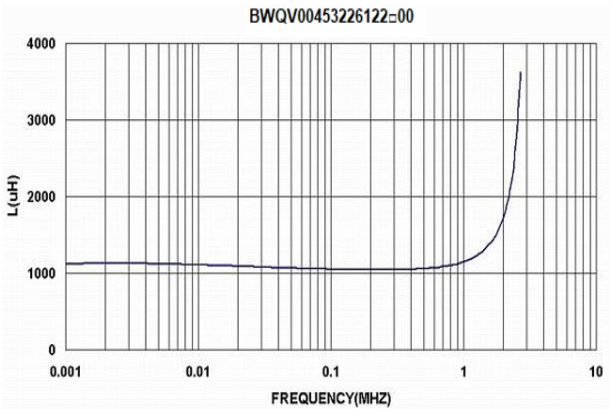

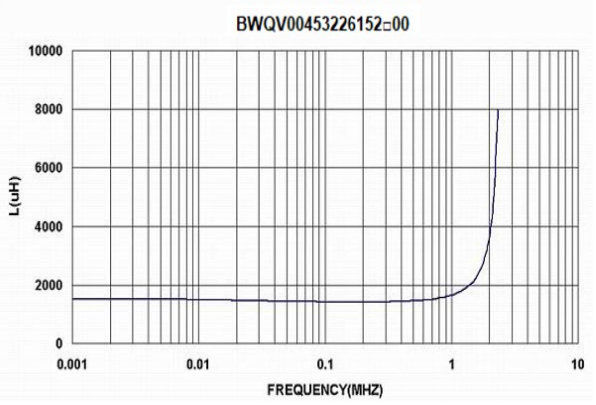

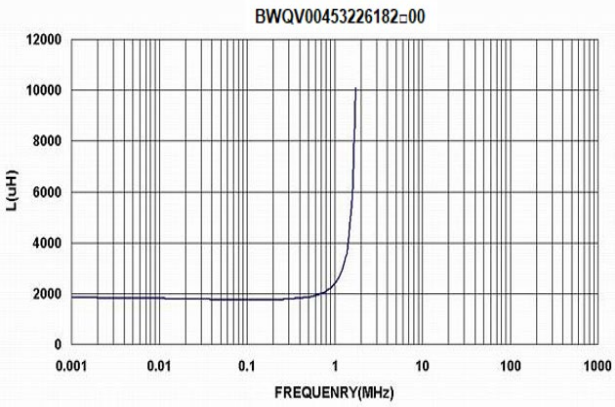

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