RF Inductor

BWNC 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 RDC and carry large current
2. Terminals are highly resistant to pull forces
3. Highly resistant to mechanical shocks and pressure
4. Superior IDC for DC/DC converter

Applications

1. DC/DC converter such as DSC
2. LCD TV
3. Game console
4. Portable VCRs

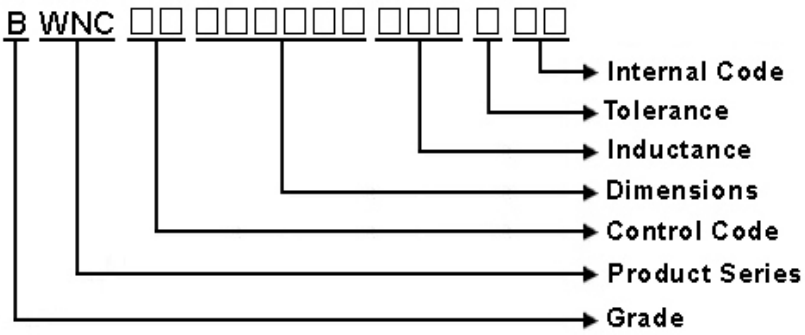
Product Information

Series	Size Code (JIS/EIA)	Inductance (nH)
BWNC	3838/1515	1 ~ 1000

BWNC00292522 Series Specification

1 Scope: This specification applies to Wire Wound Ferrite Chip Inductors

2 Part numbering:

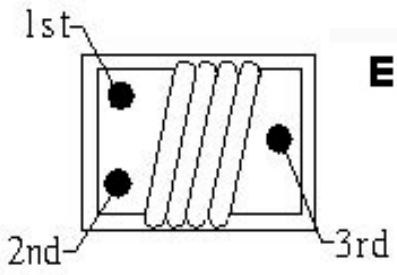


3 Rating:

Operating Temperature: - 40°C ~ 105°C
(Including self - temperature rise)

Storage Temperature: -40°C ~ 105°C
(The storage temperature range is for after the assembly)

4 Marking:



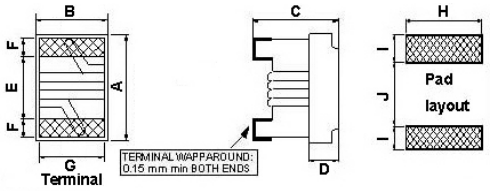
Ex Marking: 1st→BRN
2nd→BLK
3rd→RED

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

BWNC00292522 Series Specification

6 Configuration and Dimensions and Unit Weight:



Dimensions in mm

TYPE	A	B	C	D	E	F	G	H	I	J
292522	2.92 Max.	2.5 Max.	2.2 Max.	0.7	1.5	0.5	2	2.54	1.02	1.27

Net Weight (grms)

SIZE CODE	Net Weight (grms)
292522	0.04 (typ.)

7 Electrical Characteristics:

Part No.	Inductance (uH)	L,Q Test Freq. (MHZ)	Q Min.	SRF (MHZ)Min.	RDC (Ω)Max.	IDC (mA)	Tolerance (±%)	Color Code 1st	2nd	3rd
BWNC002925221R0□00	1	7.96	25	300	0.34	1500	5,10	BRN	BLK	RED
BWNC002925221R2□00	1.2	7.96	25	280	0.4	1400	5,10	BRN	RED	RED
BWNC002925221R5□00	1.5	7.96	25	270	0.42	1400	5,10	BRN	GRN	RED
BWNC002925221R8□00	1.8	7.96	25	150	0.45	1200	5,10	BRN	GRY	RED
BWNC002925222R2□00	2.2	7.96	25	140	0.5	1200	5,10	RED	RED	RED
BWNC002925222R7□00	2.7	7.96	25	130	0.55	1100	5,10	RED	VIO	RED
BWNC002925223R3□00	3.3	7.96	25	95	0.65	1000	5,10	ORN	ORN	RED
BWNC002925224R7□00	4.7	7.96	25	90	0.8	800	5,10	YEL	VIO	RED
BWNC002925226R8□00	6.8	7.96	25	68	1	730	5,10	BLU	GRY	RED
BWNC00292522100□00	10	2.52	20	45	1.5	700	5,10	BRN	BLK	ORN
BWNC00292522150□00	15	2.52	20	40	2.2	500	5,10	BRN	GRN	ORN
BWNC00292522220□00	22	2.52	20	25	2.7	470	5,10	RED	RED	ORN
BWNC00292522330□00	33	2.52	20	25	4	400	5,10	ORN	ORN	ORN
BWNC00292522390□00	39	2.52	16	20	7	320	5,10	ORN	WHT	ORN
BWNC00292522470□00	47	2.52	16	20	8	300	5,10	YEL	VIO	ORN

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

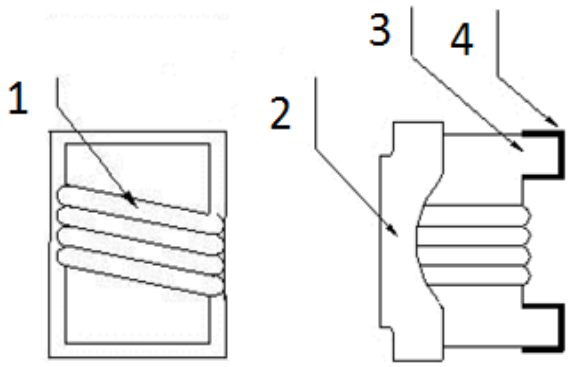
1.Operating temperature range - 40℃ ~ 105℃

2.IDC:Applied the current to coils, the inductance shall be less than 10% initial value.

BWNC00292522 Series Specification

8 BWNC00292522 Series

8.1 Construction:



8.2 Material List:

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

BWNC00292522 Series Specification

9 Reliability Of Ferrite Wire Wound Chip Inductor/FERRITE SERIES

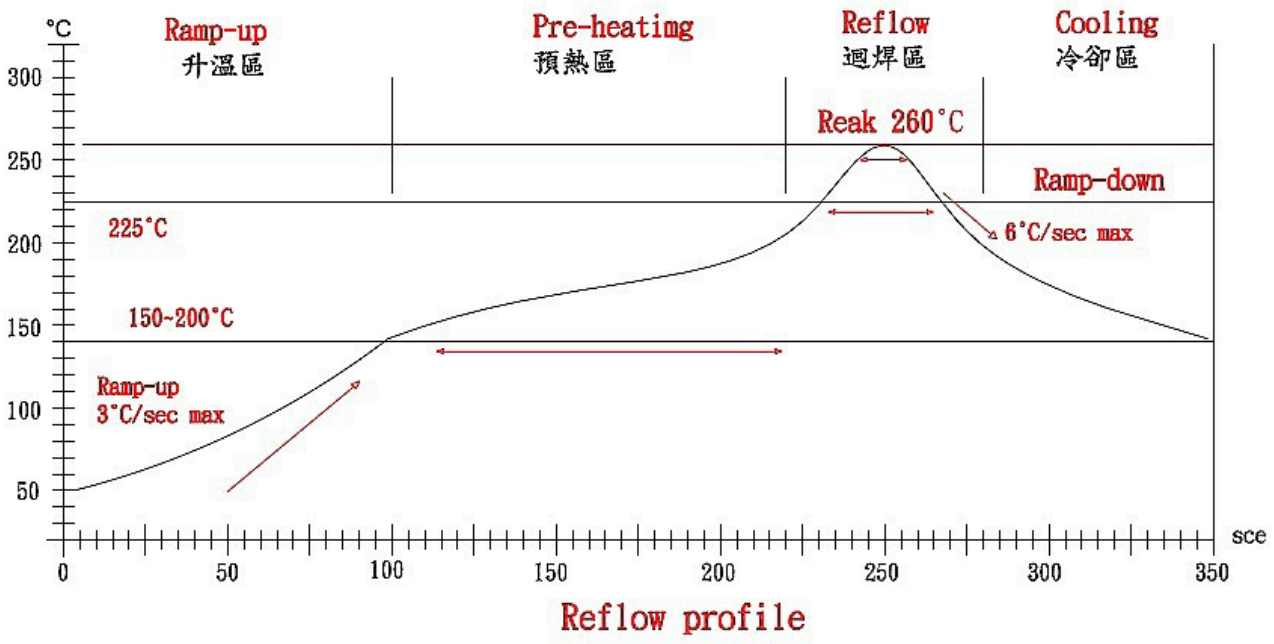
1-1.Environmental Performance

No	Item	Specification	Test Method
1-1-1	Temperature Cycle	Appearance: No Damage Inductance:within±10% of initial value Q change:within±30% of initial value	One cycle: Step / Temperature (℃) / Time (min) 1 / -40±3 / 30 2 / 25±2 / 3 3 / 105±3 / 30 4 / 25±2 / 3 Total: 5 cycles Measured After Exposure in The Room Condition For 1hrs
1-1-2	High Temperature Resistance		Temperature: 105±3℃ Time: 1000Hrs Measured After Exposure In The Room Condition For 1Hrs
1-1-3	Low Temperature Resistance		Temperature: -40±3℃ 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±2℃ Relative Humidity: 90~95% Load: Allowed DC Current Time: 96Hrs

1-2.Mechanical Performance

No	Item	Specification	Test Method
1-2-1	Resistance TO Soldering Heat	Appearance: No Damage	1. The device should be reflow soldered on PCB (peak 260℃±5℃ for 10 seconds) 2. Solder Composition: Sn/Ag3.0/Cu0.5 3. Test time: 6 minutes
1-2-2	Solder ability	The electrodes shall be at least 95% covered with new solder coating	1. Pre-Heating: 150℃,1min. 2. Solder Composition: Sn/Ag3.0/Cu0.5 3. Solder Temperature: 245±5℃. 4. Immersion Time: 4±1 sec.
1-2-3	Component Adhesion (Push Test)	2 Lbs. For 2520 Size 4 Lbs. For 3225 Size	The device should be reflow soldered (245±5℃ 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 1or2or4 pounds without a failure of the termination attached to component

BWNC00292522 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 :

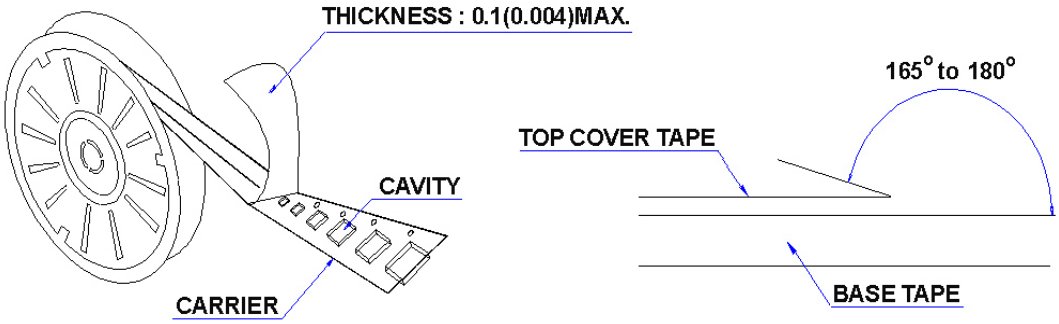
1. Re-flow possible times : within 2 times
2. Nitrogen adopted is recommended while in re-flow
3. Products can only be soldered with reflow

BWNC00292522 Series Specification

10 Packaging:

10.1 Packaging -Cover Tape

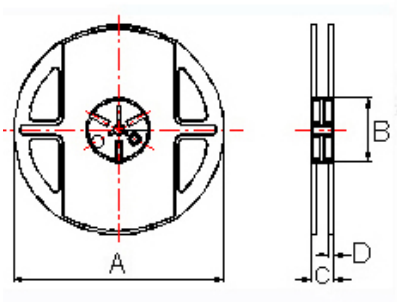
The force for tearing off cover tape is 10 to 100 grams in the arrow direction.



10.2 Packaging Quantity

TYPE	PCS/REEL
292522	2000

10.3 Reel Dimensions



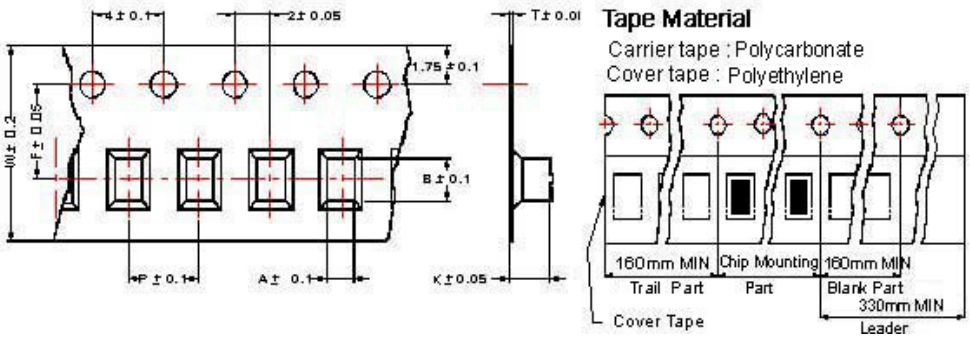
Dimensions in mm

TYPE	A	B	C	D
292522	178±1	60±0.5	12±0.5	1.5±0.5

BWNC00292522 Series Specification

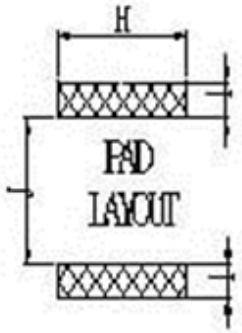
10 Packaging:

10.4 Tape Dimensions in mm



TYPE	A	B	T	W	P	F	K
292522	2.40	2.93	0.3	8	4	3.5	2.25

11 Recommended Land Pattern:



Dimensions in mm

TYPE	H(In/mm)	I(In/mm)	J(In/mm)
292522	0.10/2.54	0.04/1.02	0.05/1.27

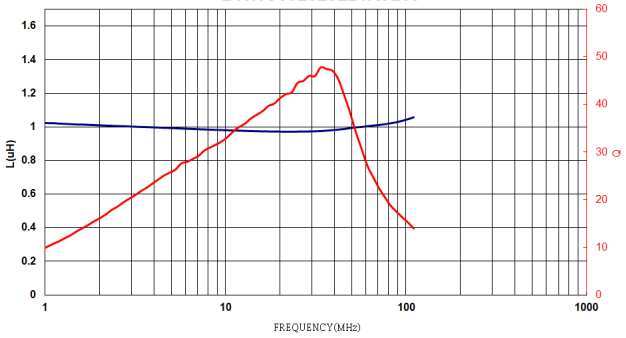
12 Note:

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% RHor 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.

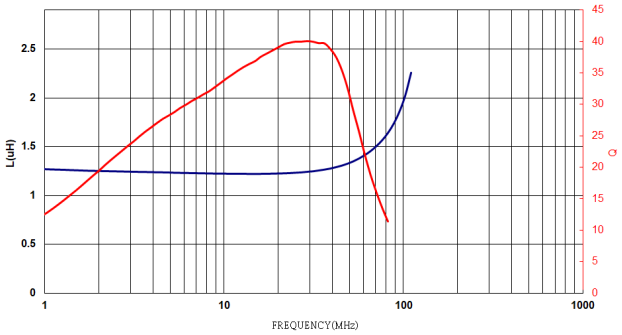
BWNC00292522 Series Specification

13 Graph:

BWNC002925221R0□00



BWNC002925221R2□00



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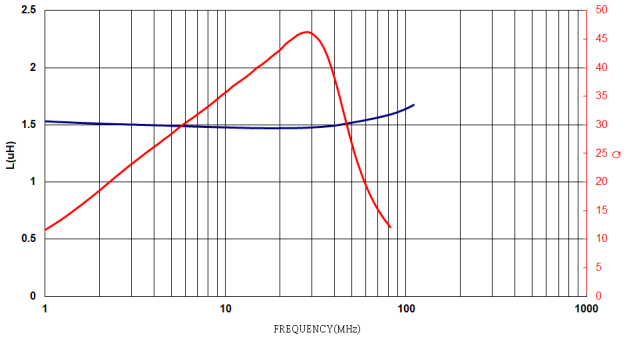

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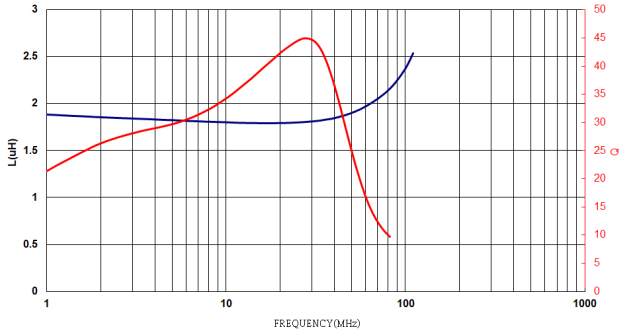

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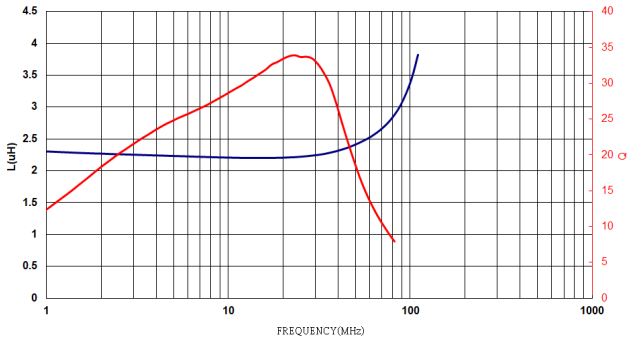

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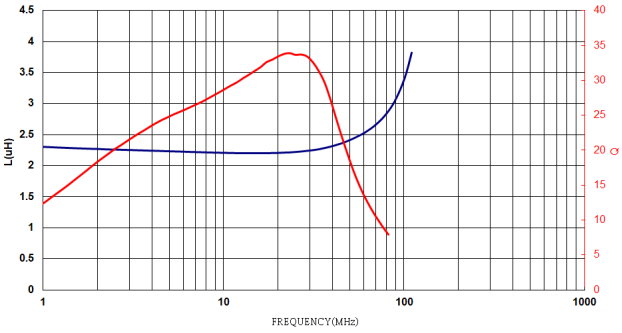

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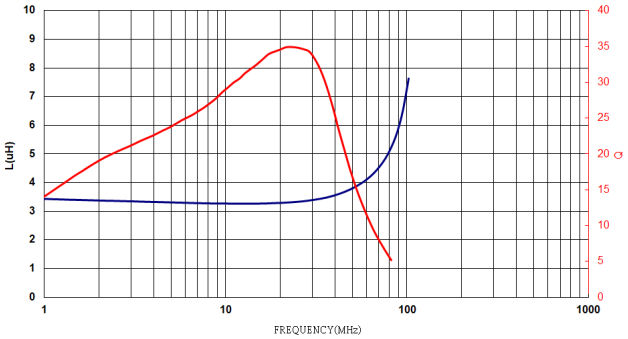

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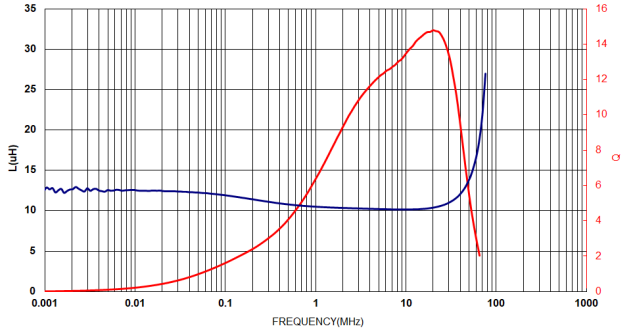
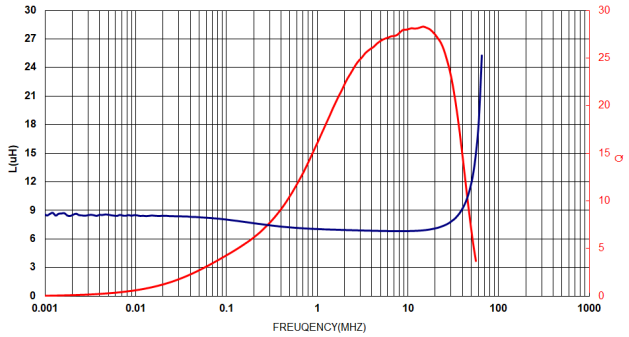


BWNC00292522 Series Specification

BWNC002925226R8□00



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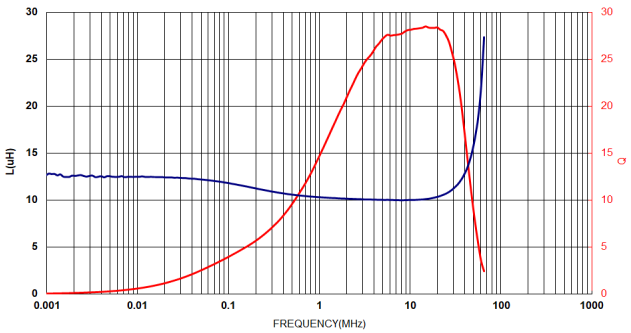

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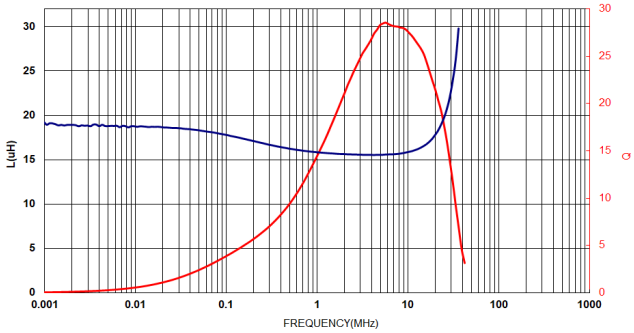

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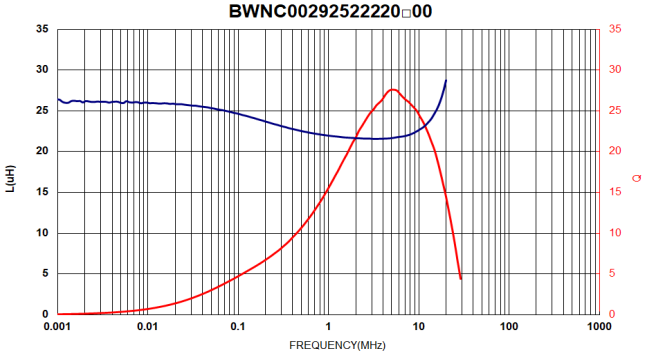

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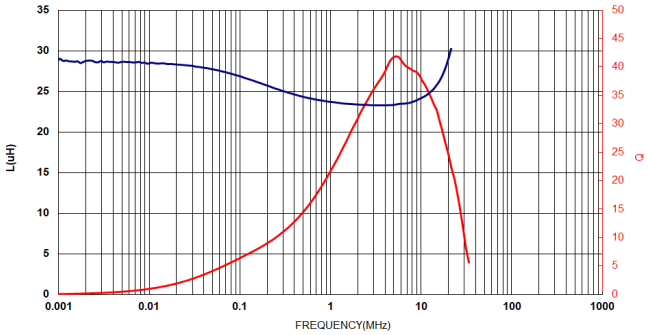

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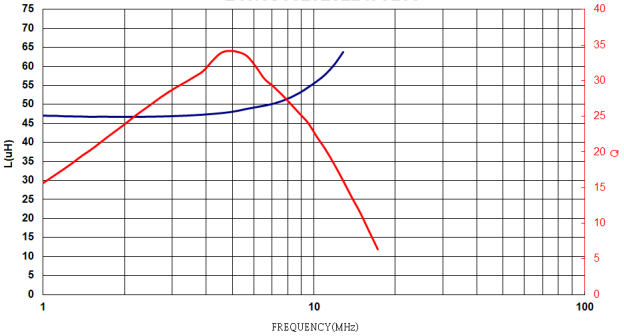

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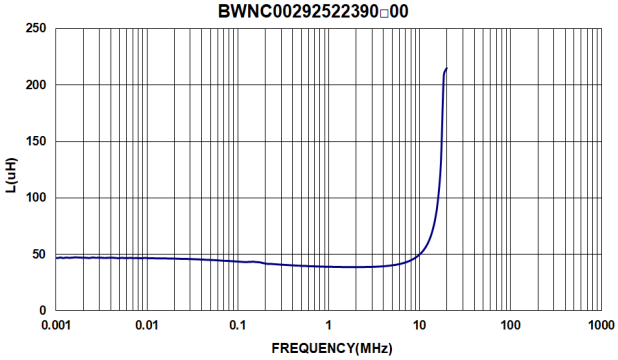

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