RF Inductor

BWNL 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. Superior Q characteristics and the broadest L selections
2. Strong solderability by reflow soldering and soldering iron
3. Terminals are highly resistant to external forces
4. Highly reliable in environments of sudden temperature change and humidity

Applications

1. Consumer electronics
2. LCD TV
3. Game console

Product Information

Series	Size Code (JIS/EIA)	Inductance (nH)
BWNL	2016/0805 2520/1008	0.005 ~ 100



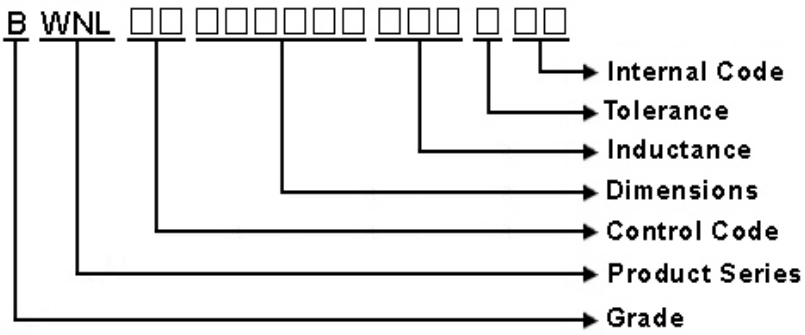
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BWNL00292522 Series Specification

1 Scope:

This specification applies to Wire Wound Ferrite Chip Inductors

2 Part numbering:

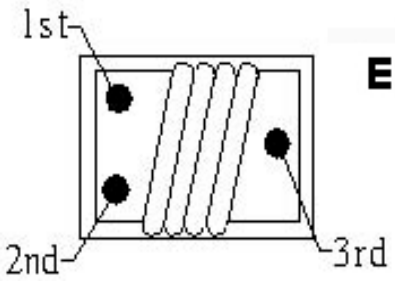


3 Rating:

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:



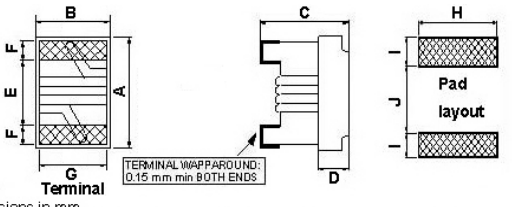
Ex Marking: 1st→Brown
2nd→Red
3rd→Black

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

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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	0.036 (typ.)

7 Electrical Characteristics:

Part No.	Inductance (uH)	Test Freq. (MHZ)200mV	Q Min.	SRF (MHZ)Min.	RDC (Ω)Max.	IDC (mA)Max.	Tolerance (±%)	Color Code 1st	2nd	3rd
BWNL00292522R12□0(	0.12	25.2	30	700	0.3	900	5,10	BRN	RED	BRN
BWNL00292522R15□00	0.15	25.2	30	550	0.35	900	5,10	BRN	GRN	BRN
BWNL00292522R18□00	0.18	25.2	30	500	0.4	850	5,10	BRN	GRY	BRN
BWNL00292522R22□00	0.22	25.2	30	450	0.5	840	5,10	RED	RED	BRN
BWNL00292522R27□00	0.27	25.2	30	425	0.55	830	5,10	RED	VIO	BRN
BWNL00292522R33□00	0.33	25.2	30	400	0.6	820	5,10	ORN	ORN	BRN
BWNL00292522R39□00	0.39	25.2	30	375	0.65	810	5,10	ORN	WHT	BRN
BWNL00292522R47□00	0.47	25.2	30	350	0.68	800	5,10	YEL	VIO	BRN
BWNL00292522R56□00	0.56	25.2	30	325	0.75	800	5,10	GRN	BLU	BRN
BWNL00292522R68□00	0.68	25.2	30	300	0.85	800	5,10	BLU	GRY	BRN
BWNL00292522R82□00	0.82	25.2	30	260	1	800	5,10	GRY	RED	BRN
BWNL002925221R0□00	1	7.96	25	245	1.1	800	5,10	BRN	BLK	RED
BWNL002925221R2□00	1.2	7.96	25	230	1.2	790	5,10	BRN	RED	RED
BWNL002925221R5□00	1.5	7.96	25	182	1.3	750	5,10	BRN	GRN	RED
BWNL002925221R8□00	1.8	7.96	25	135	1.45	750	5,10	BRN	GRY	RED
BWNL002925222R2□00	2.2	7.96	25	105	1.55	750	5,10	RED	RED	RED
BWNL002925222R7□00	2.7	7.96	25	70	1.7	740	5,10	RED	VIO	RED
BWNL002925223R3□00	3.3	7.96	25	55	1.9	730	5,10	ORN	ORN	RED
BWNL002925223R9□00	3.9	7.96	25	48	2.1	700	5,10	ORN	WHT	RED
BWNL002925224R7□00	4.7	7.96	25	43	2.3	650	5,10	YEL	VIO	RED
BWNL002925225R6□00	5.6	7.96	20	42	2.5	640	5,10	GRN	BLU	RED
BWNL002925226R8□00	6.8	7.96	20	39	2.7	630	5,10	BLU	GRY	RED
BWNL002925228R2□00	8.2	7.96	20	36	3.05	600	5,10	GRY	RED	RED
BWNL00292522100□00	10	2.52	15	33	3.5	600	5,10	BRN	BLK	ORN
BWNL00292522120□00	12	2.52	15	30	3.8	550	5,10	BRN	RED	ORN

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

1.Operating temperature range - 40°C ~ 1 0 5 °C(Including self - temperature rise)

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

3.L/Q Test OSC@200mV

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Part No.	Inductance (uH)	Test Freq. (MHZ)200mV	Q Min.	SRF (MHZ)Min.	RDC (Ω)Max.	IDC (mA)Max.	Tolerance (±%)	Color Code 1st	2nd	3rd
BWNL00292522150□00	15	2.52	15	26	4.4	430	5,10	BRN	GRN	ORN
BWNL00292522180□00	18	2.52	15	24	4.8	400	5,10	BRN	GRY	ORN
BWNL00292522220□00	22	2.52	15	22	5.5	400	5,10	RED	RED	ORN
BWNL00292522270□00	27	2.52	15	21	6.3	360	5,10	RED	VIO	ORN
BWNL00292522330□00	33	2.52	15	20	7.1	350	5,10	ORN	ORN	ORN
BWNL00292522390□00	39	2.52	10	18	9.5	330	5,10	ORN	WHT	ORN
BWNL00292522470□00	47	2.52	10	17	11.1	300	5,10	YEL	VIO	ORN
BWNL00292522560□00	56	2.52	10	16	12.1	270	5,10	GRN	BLU	ORN
BWNL00292522680□00	68	2.52	10	15	16.6	250	5,10	BLU	GRY	ORN
BWNL00292522820□00	82	2.52	10	13	19	200	5,10	GRY	RED	ORN
BWNL00292522101□00	100	0.796	8	12	21	120	5,10	BRN	BLK	YEL

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

1.Operating temperature range - 40°C ~ 1 0 5 °C(Including self - temperature rise)

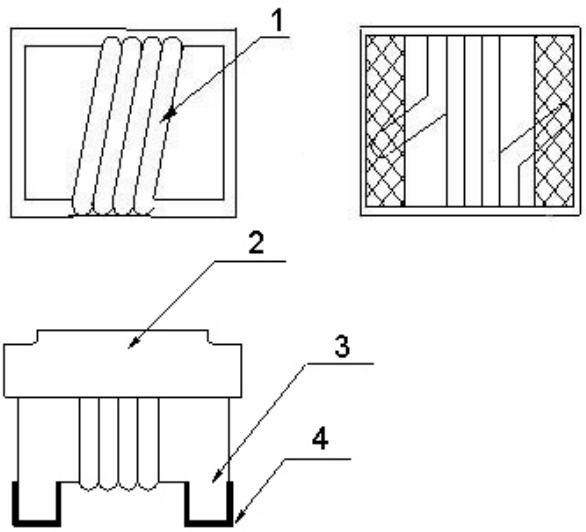
2.IDC:Applied the current to coils, the inductance shall be less than 10% initial value.

3.L/Q Test OSC@200mV

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8 BWNL00292522 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/Cu/Ni/Sn

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9 Reliability Of Ferrite Wire Wound Chip Inductor/FERRITE SERIES

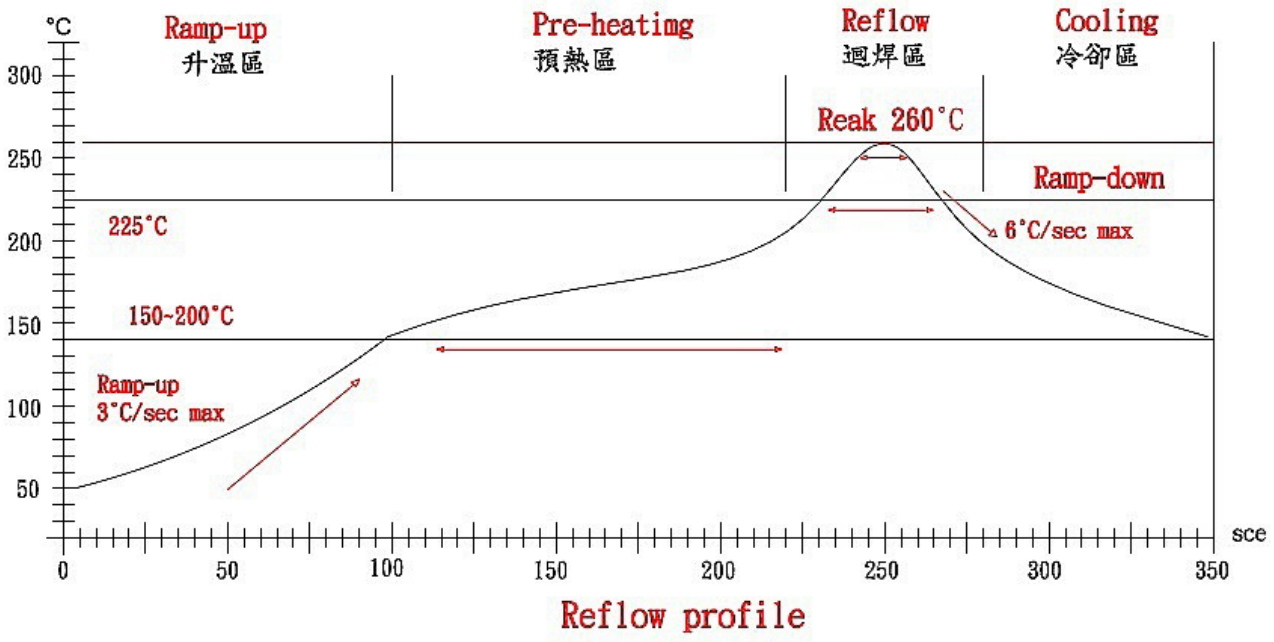
1-1.Environmental Performance

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

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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 :

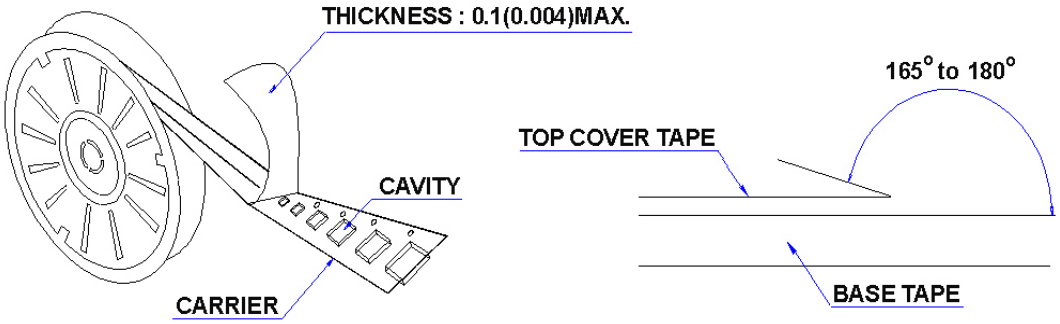
1. Re-flow possible times : within 2 times
2. Nitrogen adopted is recommended while in re-flow
3. Products can only be soldered with reflow

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10 Packaging:

10.1 Packaging -Cover Tape

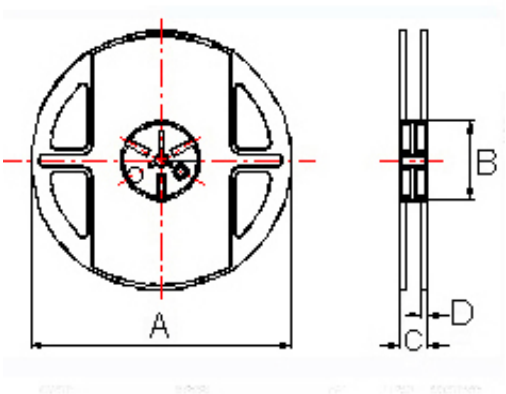
The force for tearing off cover tape is 10 to 100 grams in the arrow direction.



10.2 Packaging Quantity

TYPE	PCS/REEL
292522	2000

10.3 Reel Dimensions



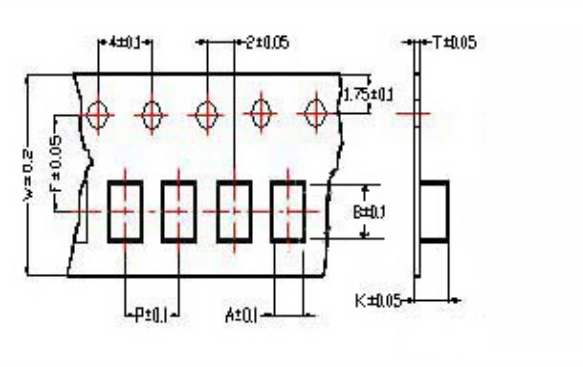
Dimensions in mm

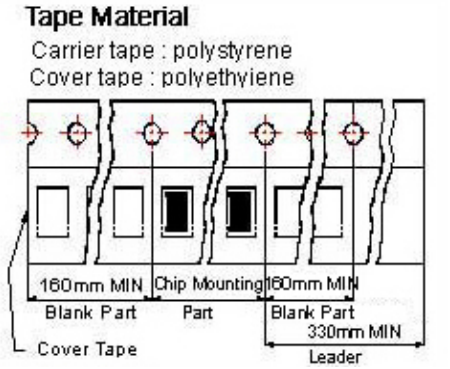
TYPE	A	B	C	D
292522	178±1	60±0.5	12±0.5	1.5±0.5

BWNL00292522 Series Specification

10 Packaging:

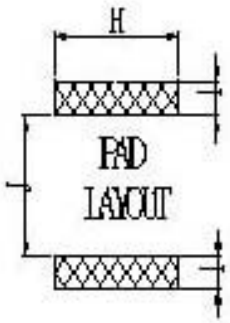
10.4 Tape Dimensions in mm





TYPE	A	B	T	W	P	F	K
292522	2.80	2.95	0.3	8	4	3.5	2.20

11 Recommended Land Pattern:



Dimensions in mm

TYPE	H(In/mm)	I(In/mm)	J(In/mm)
292822	0.10/2.54	0.04/1.02	0.05/1.27

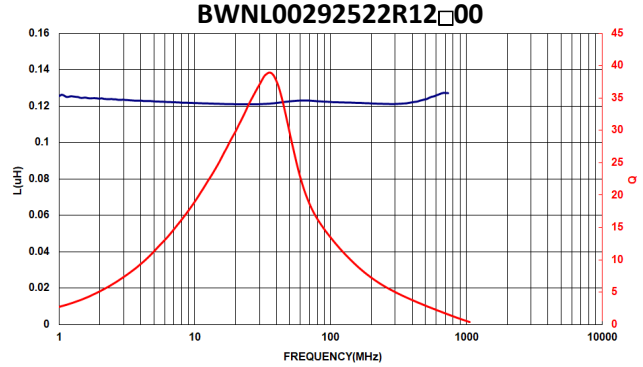
12 Note:

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.

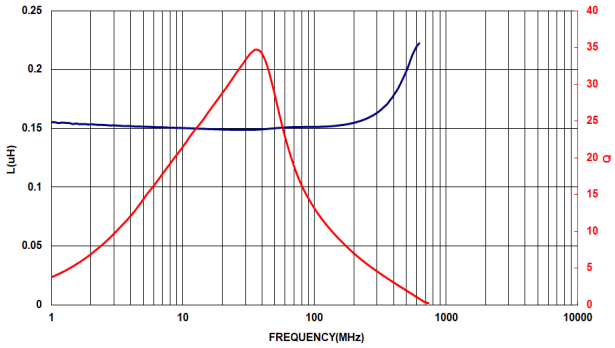
BWNL00292522 Series Specification

12 Graph:

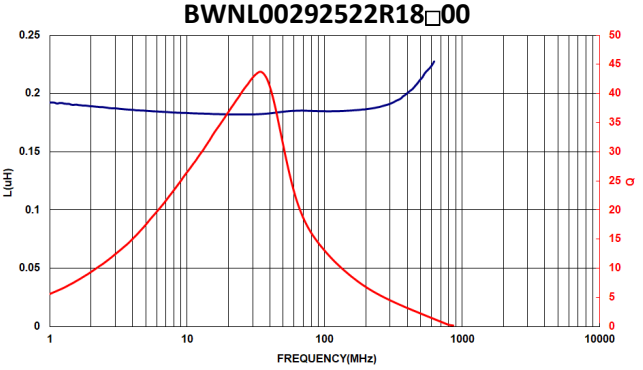
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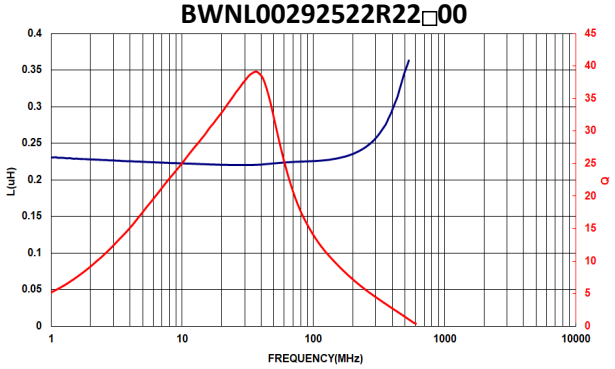
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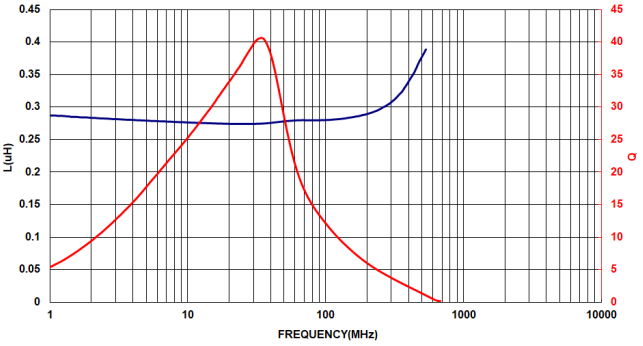
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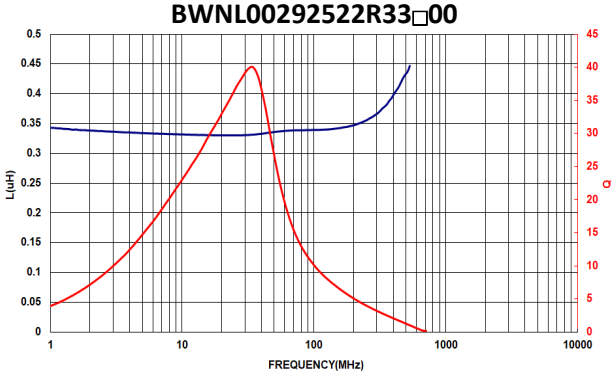
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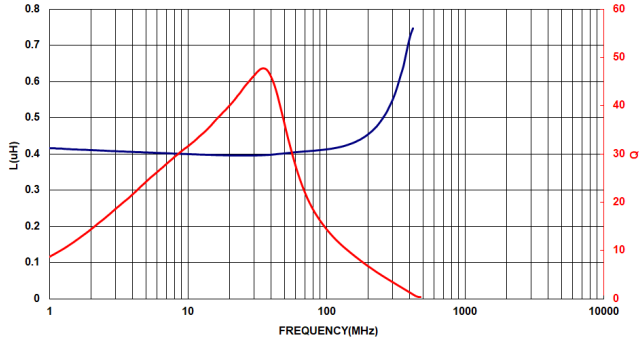
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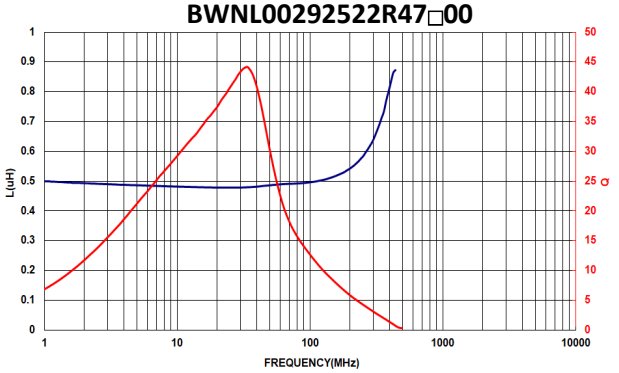
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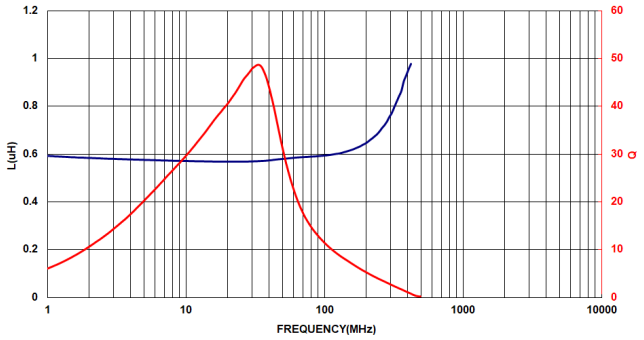


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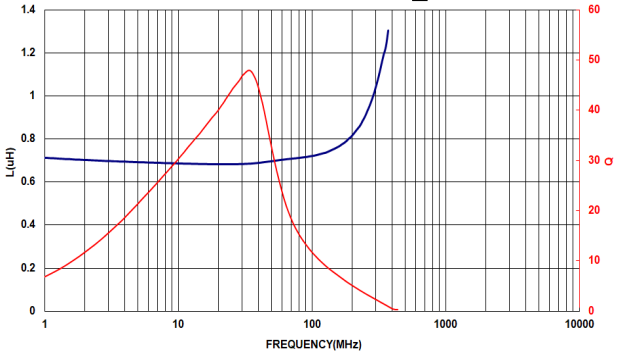


BWNL00292522 Series Specification

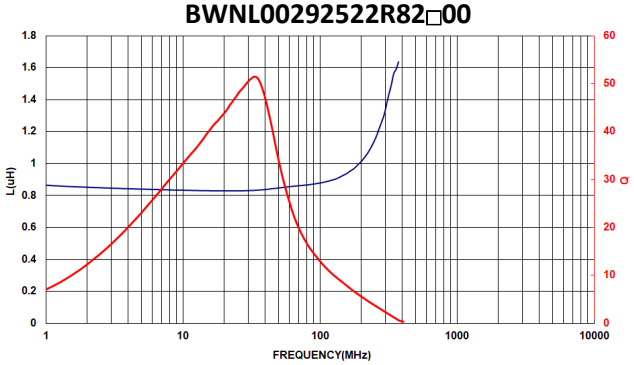
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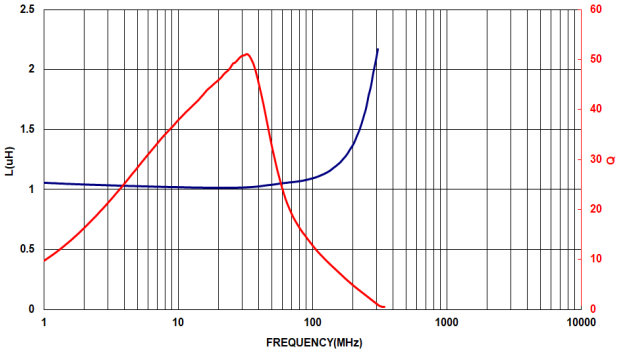
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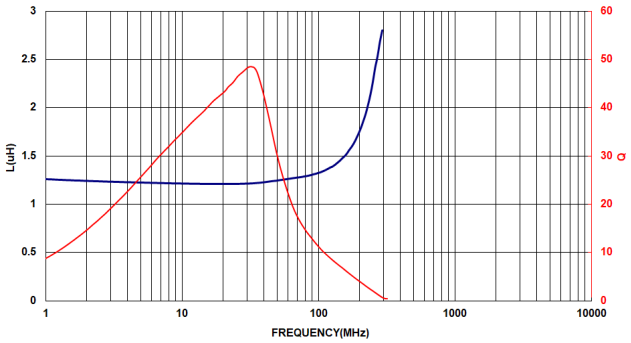
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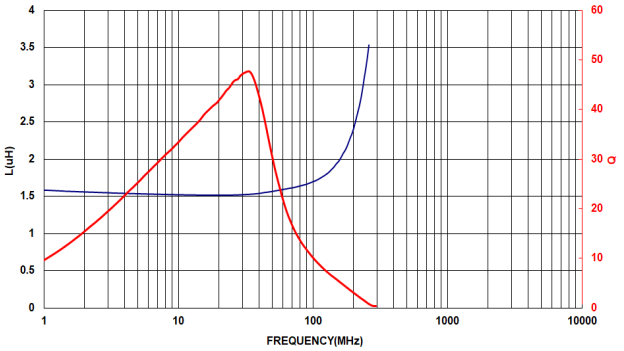
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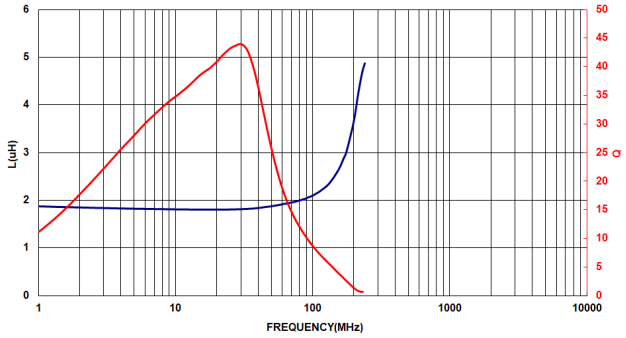
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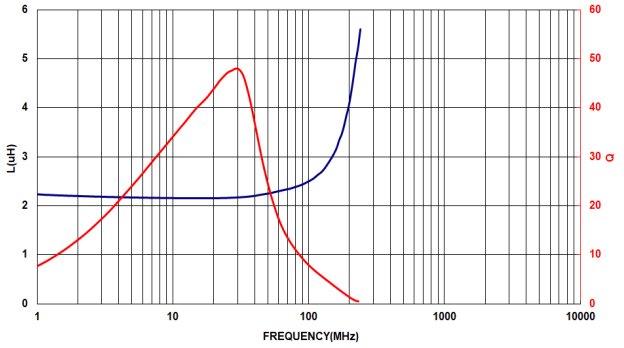
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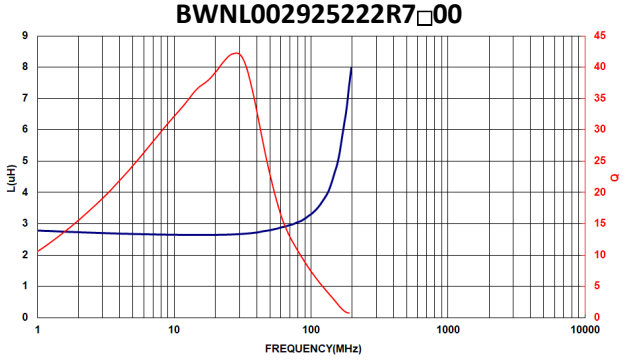


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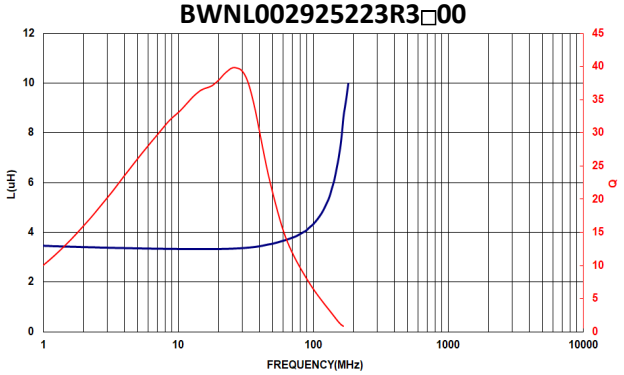


BWNL00292522 Series Specification

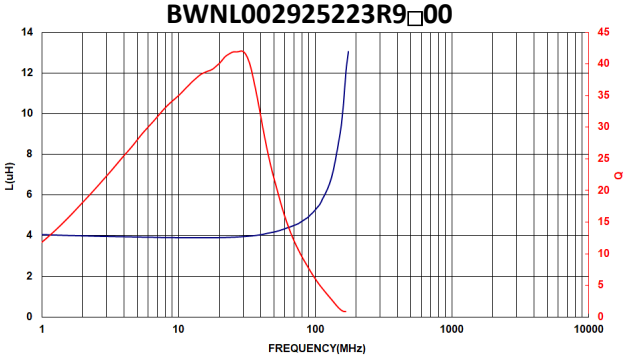
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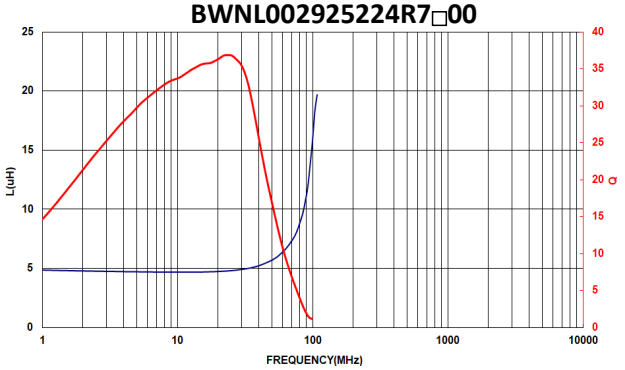
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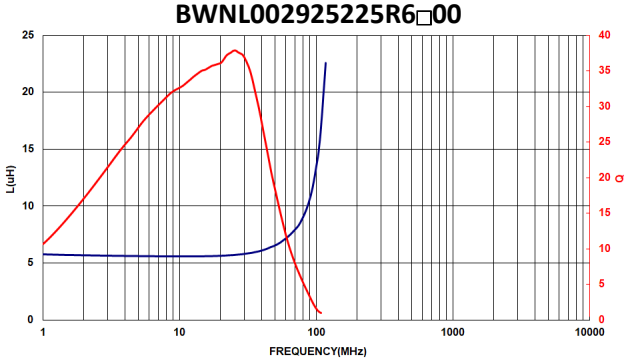
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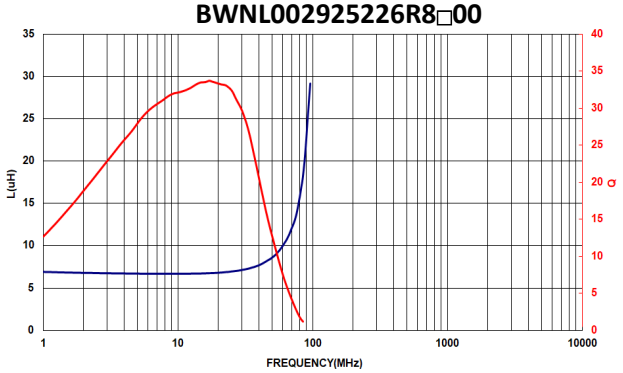
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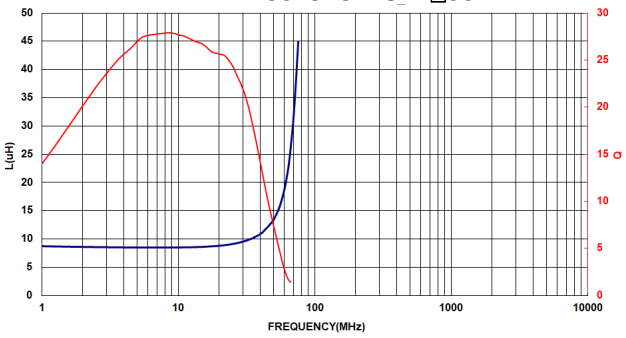
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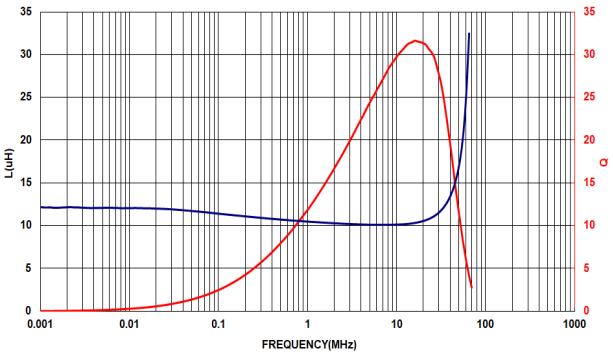
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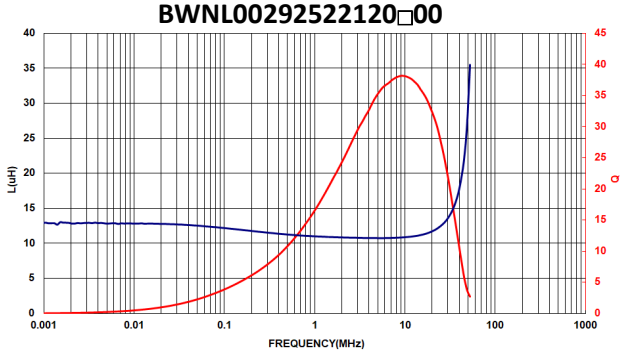


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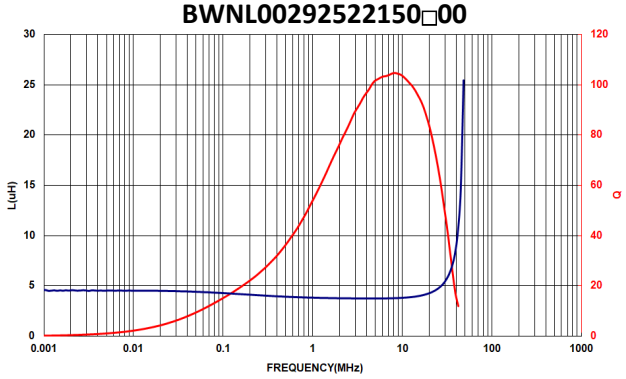


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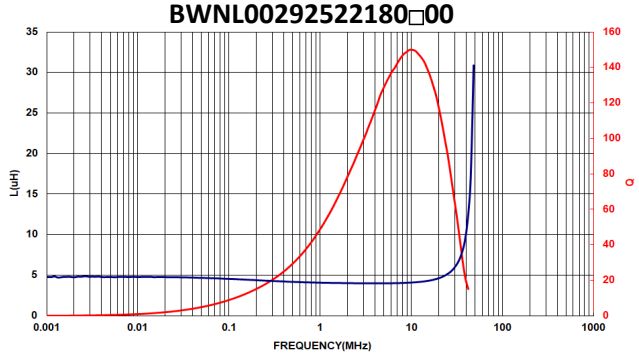
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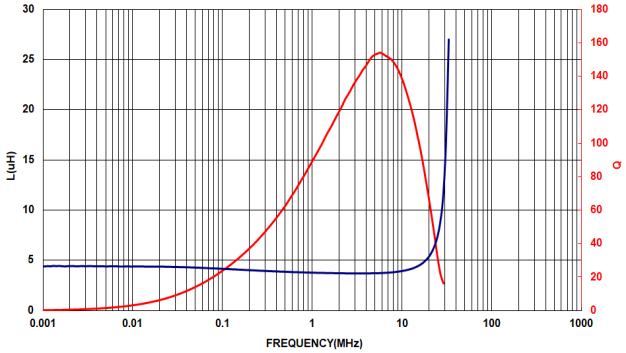
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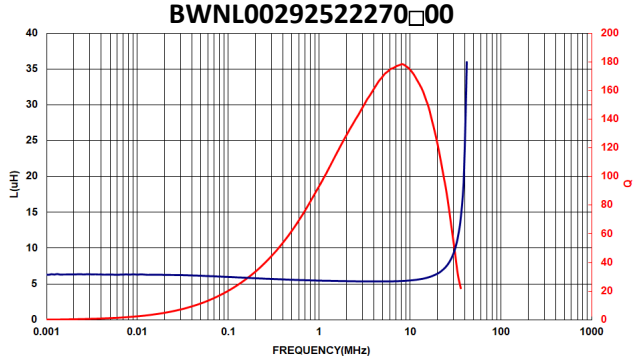
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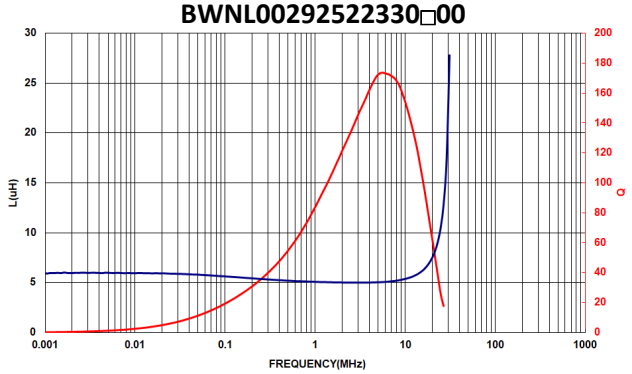
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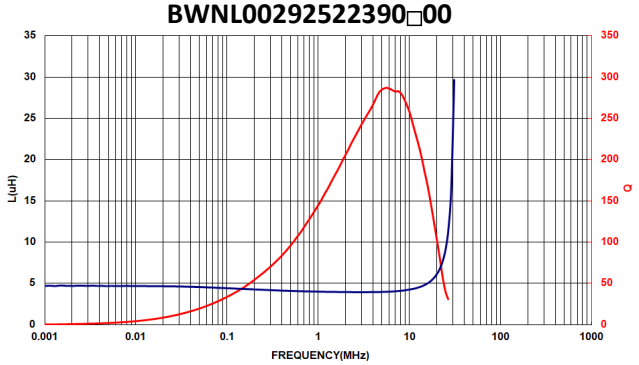
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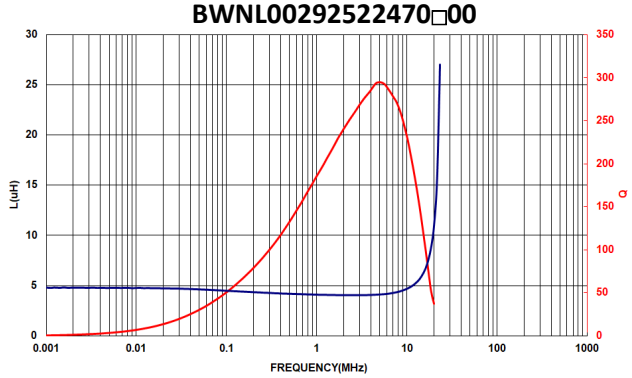
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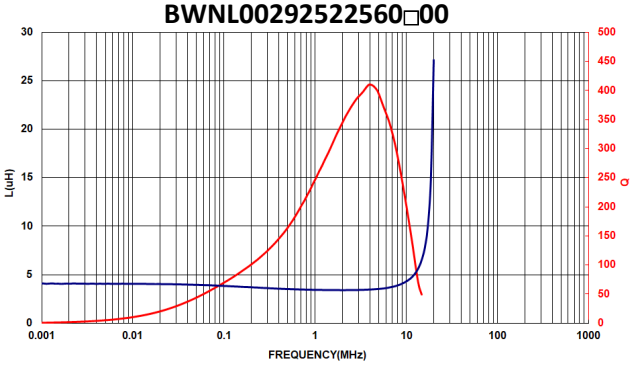


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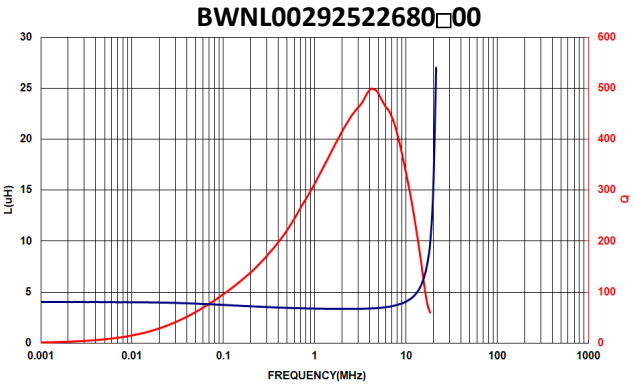


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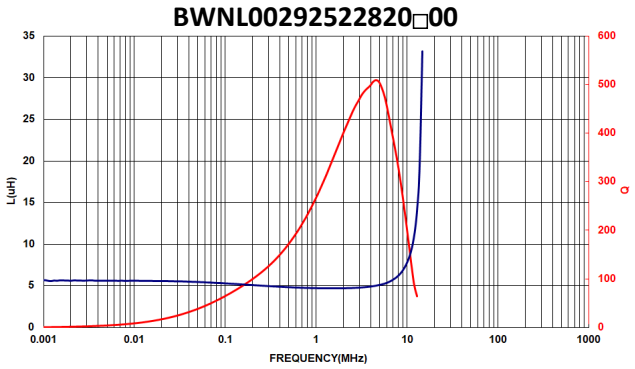
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