

RF Inductor



BWLM 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 DCR & better Q value in ferrite series
2. Ceramic body and wire wound construction provide high SRFs
3. Very strong solderability by reflow soldering and soldering iron
4. High Current Handling
5. Terminals are highly resistant to external forces

Applications

1. Telecom and datacom applications such as XDSL
2. Cable modem
3. Set-top box
4. CATV filter/tuner
5. Wireless LAN, etc

Product Information

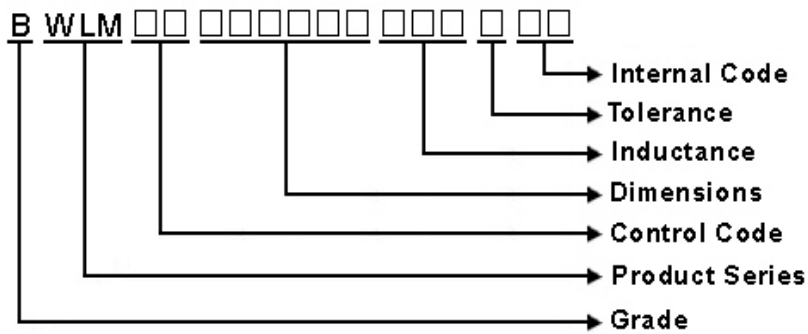
Series	Size Code (JIS/EIA)	Inductance (nH)
BWLM	1005/0402 1608/0603	4.9 ~ 650



BWLM00181009 Series Specification

1 Scope: This specification applies to Wire Wound Ferrite 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:

No Marking

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 and Unit Weight:

Dimensions in mm

TYPE	A	B	C	D	E	F	G	H	I	J
181009	1.8±0.1	1.0±0.1	0.9±0.1	0.6	0.8	0.4	0.85	1.00	0.75	0.70

Net Weight (grms)

SIZE CODE	Net Weight (grms)
181009	0.005 (typ.)

7 Electrical Characteristics:

Part No.	Inductance (nH)	L Test Freq. (MHz)	SRF (MHz)Min.	RDC (Ω)Max.	I _{rms} (mA)Max.	Tolerance
BWLM001810094N□00	4.9	10	2300	0.015	2600	D
BWLM0018100915N□00	15	10	2000	0.025	2200	J
BWLM0018100933N□00	33	10	1800	0.035	1700	J
BWLM0018100955N□00	55	10	1600	0.045	1500	J
BWLM0018100985N□00	85	10	1380	0.06	1400	J
BWLM00181009R10□00	100	10	1260	0.1	1000	K,J
BWLM00181009R12□00	120	10	1200	0.085	1100	J
BWLM00181009R16□00	160	10	900	0.1	1000	J
BWLM00181009R21□00	210	10	720	0.15	800	J
BWLM00181009R27□00	270	10	660	0.16	750	J
BWLM00181009R33□00	330	10	600	0.25	630	J
BWLM00181009R39□00	390	10	570	0.28	620	J
BWLM00181009R47□00	470	10	555	0.45	500	J
BWLM00181009R56□00	560	10	540	0.48	450	J
BWLM00181009R65□00	650	10	510	0.52	430	J

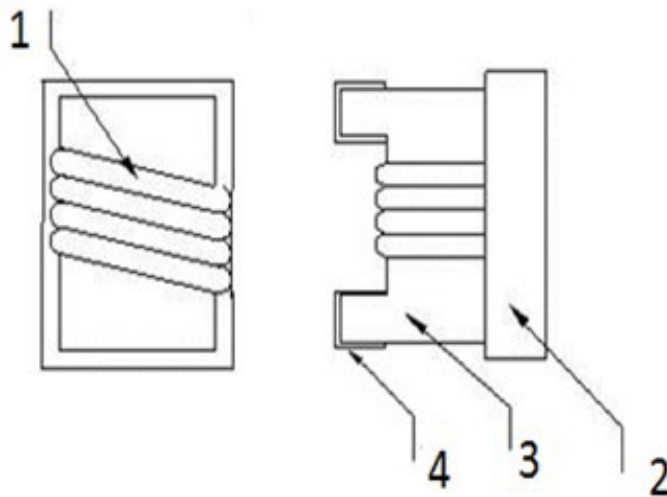
NOTE: □-tolerance D=±0.5nH / J=±5% / K=±10%

1. Operating temperature range - 40°C ~ 125°C
2. L Test OSC @200mV.
3. I_{rms} for a 20°C temperature rise from 25°C ambient.
4. Inductance would be correct Chilisin standard piece.
5. offset value -0.771

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8 BWLM00181009 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

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9 Reliability Of Ferrite Wire Wound Chip Inductor/FERRITE SERIES

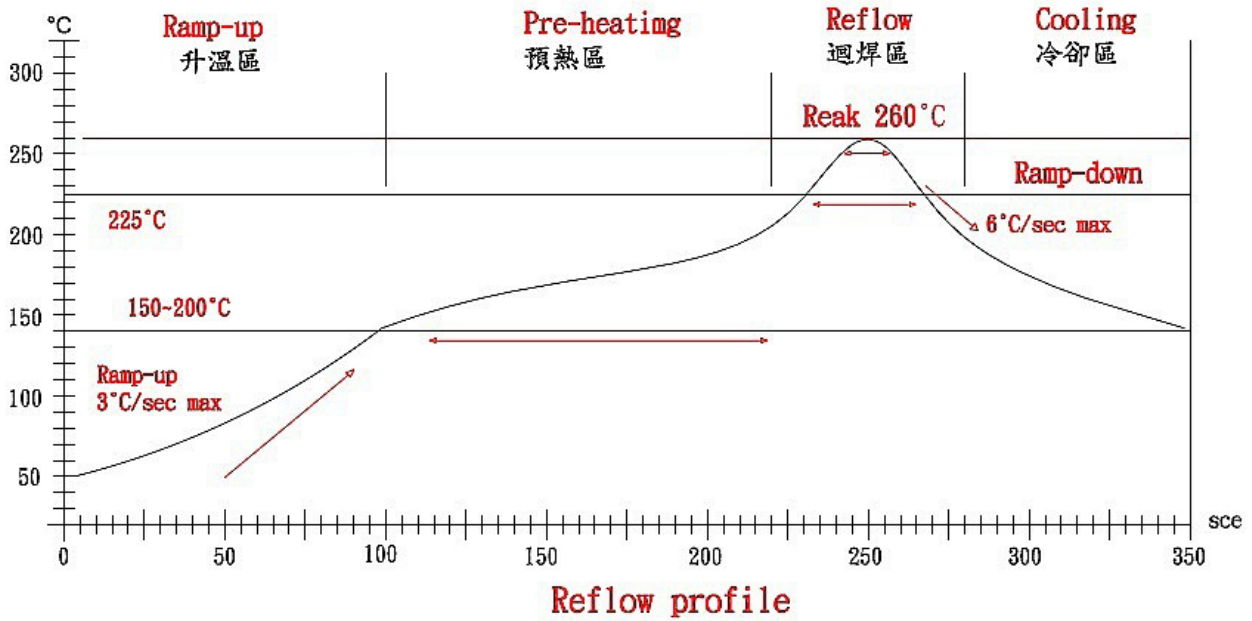
1-1.Environmental Performance

No	Item	Specification	Test Method		
1-1-1	Temperature Cycle	Appearance: No Damage Inductance: within $\pm 10\%$ 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			
1-1-2	High Temperature Resistance	There should be no evidence of short or open circle	Total: 5 cycles Measured After Exposure in The Room Condition For 1hrs		
1-1-3	Low Temperature Resistance		Temperature: 125 \pm 3 $^{\circ}\text{C}$ Time: 1000Hrs Measured After Exposure In The Room Condition For 1Hrs		
1-1-4	Humidity Load Life		Temperature: -40 \pm 3 $^{\circ}\text{C}$ Time: 1000Hrs Measured After Exposure In The Room Condition For 1Hrs		
			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

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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°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 :

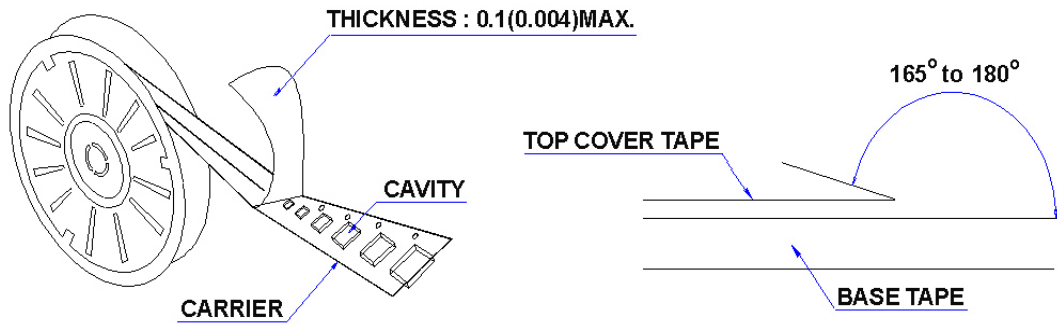
1. Re-flow possible times : within 2 times
2. Nitrogen adopted is recommended while in re-flow
3. Products can only be soldered with reflow

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10 Packaging:

10.1 Packaging -Cover Tape

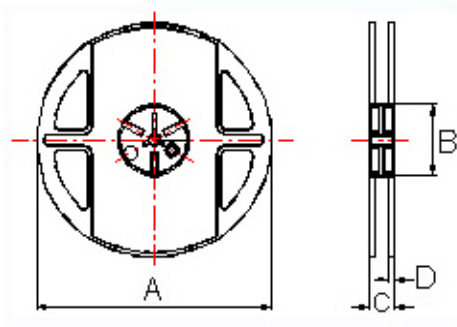
The force for tearing off cover tape is 10 to 100 grams in the arrow direction.



10.2 Packaging Quantity

TYPE	PCS/REEL
181009	4000

10.3 Reel Dimensions



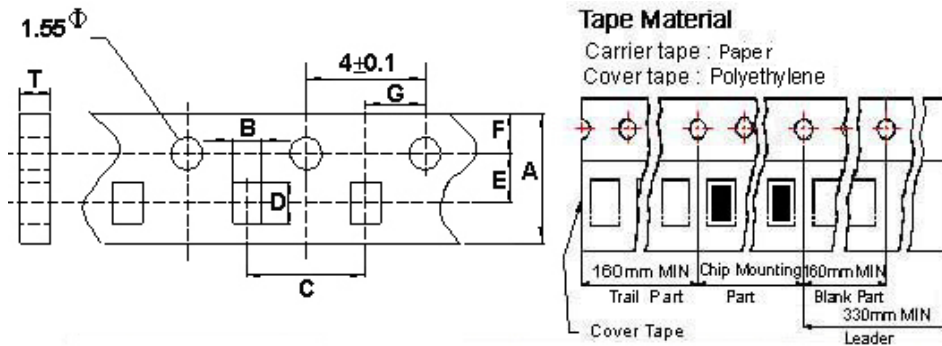
Dimensions in mm

TYPE	A	B	C	D
181009	178±1	60±0.5	12±0.5	1.5±0.5

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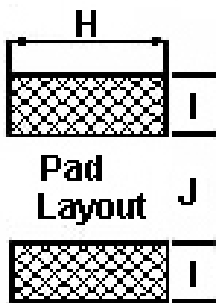
10 Packaging:

10.4 Tape Dimensions in mm



TYPE	A	B	C	D	E	F	G	T
181009	8.0	1.20	4	2	3.5	1.75	2	1.1

11 Recommended Land Pattern:



Dimensions in mm

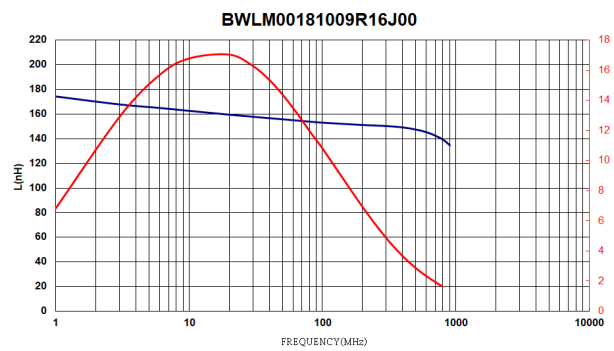
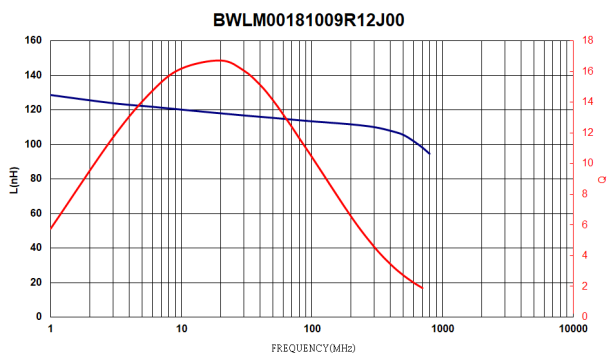
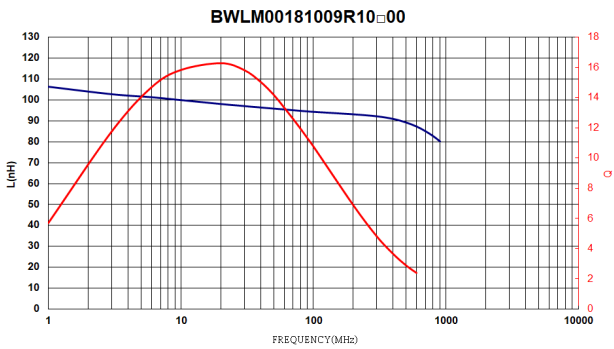
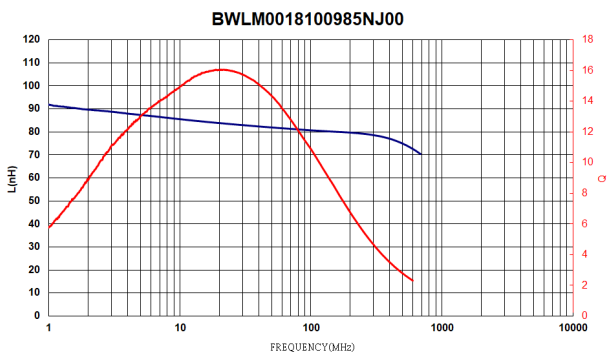
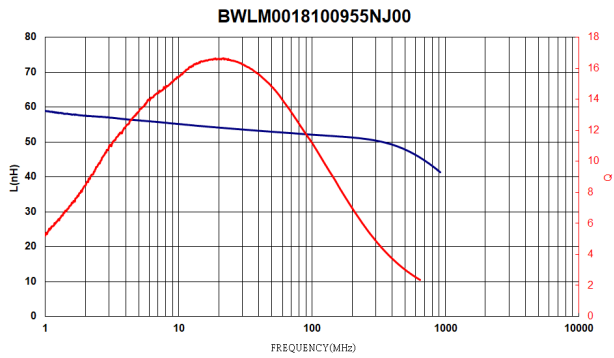
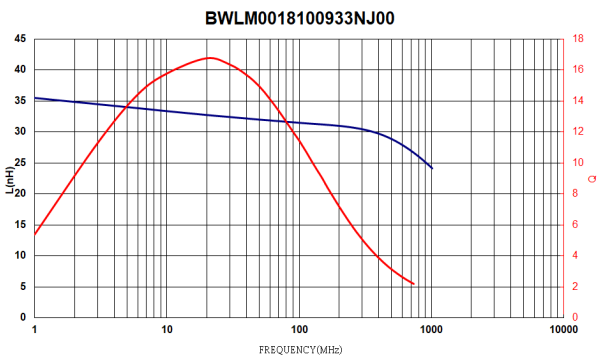
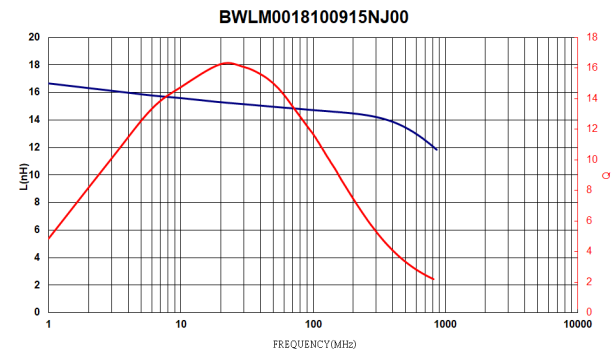
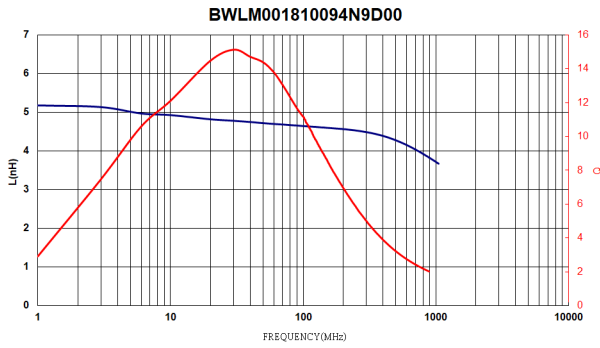
TYPE	H	I	J
181009	1.00	0.75	0.70

12 Note:

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

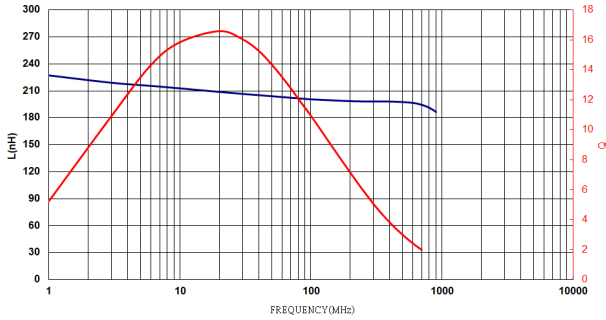
BWLM00181009 Series Specification

13 Graph:

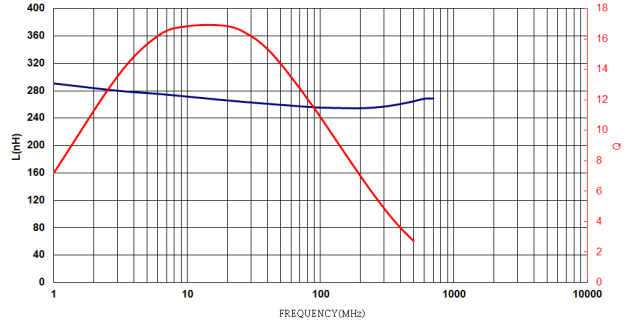


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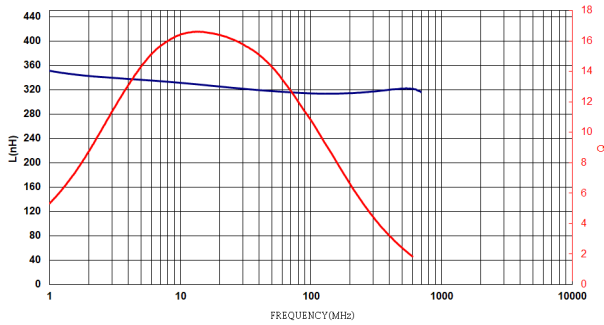
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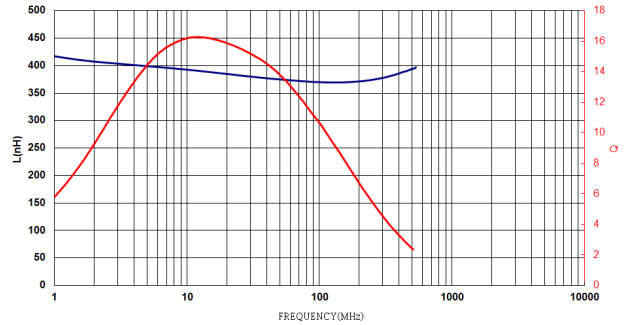
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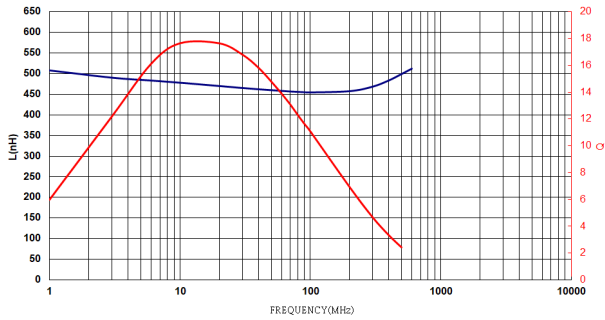
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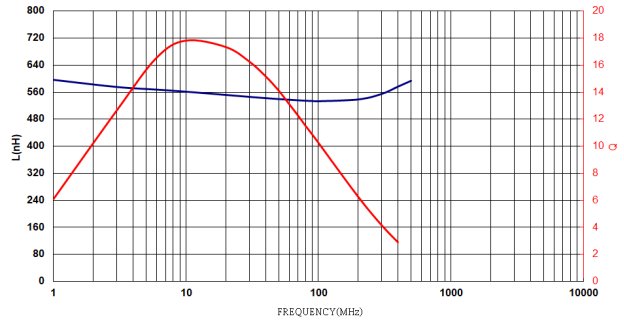
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BWLM00181009R56J00



BWLM00181009R65J00

