RF Inductor

BSCH Series

Overview

RF inductors are designed to operate at high frequencies, typically in the MHz to GHz range. Unlike power inductors, RF inductors are optimized for signal processing in radio frequency (RF) circuits. They play a vital role in tuning, filtering and impedance matching in communication and signal transmission systems.

Benefits

1. High frequency performance, for efficient operation at radio frequencies with minimal loss.
2. It can reduce noise and distortion and maintain the integrity of radio frequency signals.
3. Space-saving, suitable for constrained designs in portable devices and IoT applications.
4. Can be customized with specific requirements such as frequency range, impedance and size.

Applications

1. Communication Systems: Mobile phones, Wi-Fi routers, and 5G equipment.
2. Antenna Matching Networks
3. IoT and Smart Devices
4. Medical Devices
5. Consumer Electronics

Product Information

Series	Size Code (JIS/EIA)	Inductance (nH)
BSCH	0603/0201 1005/0402 1608/0603	1 ~ 390

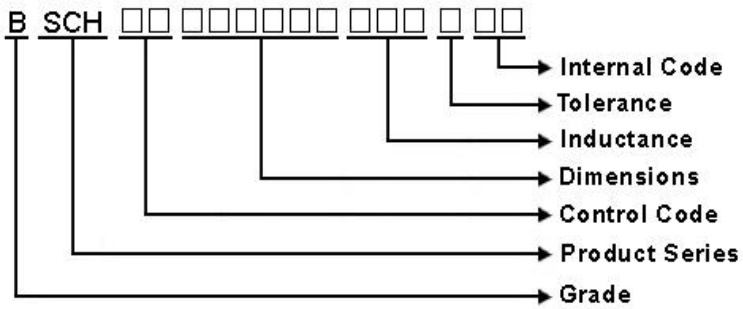


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BSCH00100505 Series Specification

1 Scope:
This specification applies to Multilayer ceramic chip inductors

2 Part Numbering:

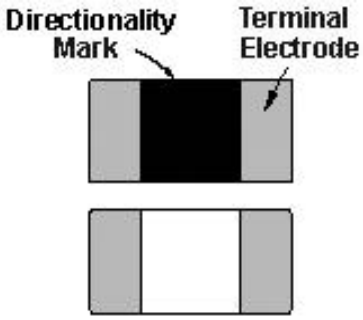


3 Rating:

Operating Temperature: - 55℃ ~ 125℃(Including self - temperature rise)

Storage Temperature: - 55℃ ~ 125℃(after PCB)
- 5℃~40℃,Humidity 40%~70%(before PCB)

4 Marking:



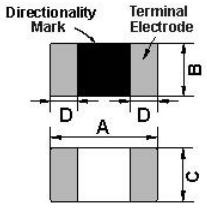
5 Standard Testing Condition

	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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BSCH00100505 Series Specification

6 Configuration and Dimensions:



Dimensions in mm

TYPE	100505
A	1.00±0.10
B	0.50±0.10
C	0.50±0.10
D	0.25±0.10

Net Weight (grms)

Size Code	Net Weight (grms)
BSCH00100505	0.00081

7 Electrical Characteristics:

Part No.	Inductance (nH)	L,Q Test Freq.	Q Min.	SRF (MHz)Typ.	RDC (Ω)Max.	Rated Current (mA)Max.	Tolerance
BSCH001005051N0□SM	1	100 MHz,200 mV	8	10000	0.07	400	S
BSCH001005051N2□SM	1.2	100 MHz,200 mV	8	6000	0.1	400	S
BSCH001005051N5□SM	1.5	100 MHz,200 mV	8	6000	0.1	400	S
BSCH001005051N6□SM	1.6	100 MHz,200 mV	8	6000	0.1	400	S
BSCH001005051N8□SM	1.8	100 MHz,200 mV	8	6000	0.1	400	S
BSCH001005052N0□SM	2	100 MHz,200 mV	8	6000	0.12	400	S
BSCH001005052N2□SM	2.2	100 MHz,200 mV	8	6000	0.15	400	S
BSCH001005052N4□SM	2.4	100 MHz,200 mV	8	6000	0.15	400	S
BSCH001005052N7□SM	2.7	100 MHz,200 mV	8	6000	0.15	400	S
BSCH001005053N0□SM	3	100 MHz,200 mV	8	6000	0.15	400	S
BSCH001005053N3□SM	3.3	100 MHz,200 mV	8	6000	0.15	400	S
BSCH001005053N6□SM	3.6	100 MHz,200 mV	8	6000	0.15	400	S
BSCH001005053N9□SM	3.9	100 MHz,200 mV	8	6000	0.19	400	S
BSCH001005054N3☐SM	4.3	100 MHz,200 mV	8	6000	0.2	400	S
BSCH001005054N7☐SM	4.7	100 MHz,200 mV	8	6000	0.2	400	S
BSCH001005055N1☐SM	5.1	100 MHz,200 mV	8	6000	0.2	400	S
BSCH001005055N6☐SM	5.6	100 MHz,200 mV	8	5300	0.2	400	S
BSCH001005056N2☐SM	6.2	100 MHz,200 mV	8	4300	0.25	400	J
BSCH001005056N8☐SM	6.8	100 MHz,200 mV	8	4200	0.25	400	J
BSCH001005057N5☐SM	7.5	100 MHz,200 mV	8	3900	0.25	400	J
BSCH001005058N2☐SM	8.2	100 MHz,200 mV	8	3600	0.3	300	J
BSCH001005059N1☐SM	9.1	100 MHz,200 mV	8	3400	0.34	300	J
BSCH0010050510N☐SM	10	100 MHz,200 mV	8	3200	0.35	300	J
BSCH0010050512N☐SM	12	100 MHz,200 mV	8	2800	0.35	300	J
BSCH0010050515N☐SM	15	100 MHz,200 mV	8	2300	0.46	300	J

NOTE: ☐-tolerance J=±5% / S=±0.3nH

1.Operating temperature range - 5 5 °C ~ 1 2 5 °C(Including self - temperature rise)

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

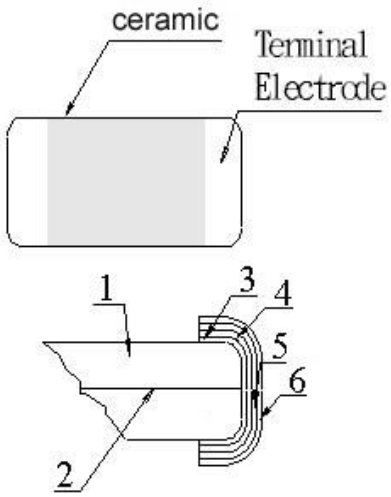
3.Residual impedance of short chip : 0.55nH

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BSCH00100505 Series Specification

8 BSCH00100505 Series

8.1 Construction:



8.2 Material List:

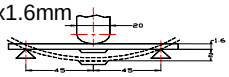
No	Part	Material
1	**Main Substance**	Al2O3-B2O3-SiO2
2	**Silver electrode**	**Ag**
3	**Silver electrode**	**Ag**
4	**Cu plating**	**Cu**
5	**Ni plating**	**Ni**
6	**Sn plating**	**Sn**

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BSCH00100505 Series Specification

9 Reliability Of Ceramic Multilayer Chip Inductor For High Freq.

1-1.Mechanical Performance

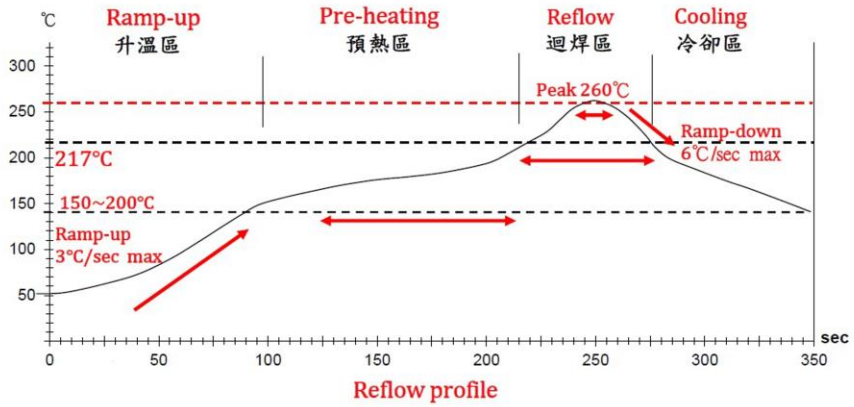
No	Item	Specification	Test Method
1-1-1	Flexure Strength	The forces applied on the right conditions must not damage the terminal electrode and the Ceramic.	Test device shall be soldered on the substrate Substrate Dimension: 100x40x1.6mm Deflection: 2.0mm Keeping Time: 30sec *For 100505, substrate dimension is 100x40x0.8mm 
1-1-2	Vibration		Test device shall be soldered on the substrate Oscillation Frequency: 10 to 55 to 10Hz for 1min Amplitude: 1.5mm Time: 2hrs for each axis (X, Y & Z), total 6hrs
1-1-3	Resistance to Soldering Heat	Appearance: No damage	Pre-heating: 150℃, 1min Solder Composition: Sn/Ag3.0/Cu0.5(Pb-Free) Solder Temperature: 260±5℃ Immersion Time: 10±1sec
1-1-4	Solder ability	The electrodes shall be at least 95% covered with new solder coating	Pre-heating: 150℃, 1min Solder Composition: Sn/Ag3.0/Cu0.5(Pb-Free) Solder Temperature: 245±5℃(Pb-Free) Immersion Time: 4±1sec

1-2.Environmental Performance

No	Item	Specification	Test Method
1-2-1	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 / -55±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
1-2-2	Humidity Resistance		Temperature: 40±2℃ Relative Humidity: 90 ~ 95% Time: 1000hrs Measured after exposure in the room condition for 24hrs
1-2-3	High Temperature Resistance		Temperature: 125±3℃ Relative Humidity: 0% Applied Current: Rated Current / Time: 1000hrs Measured after exposure in the room condition for 24hrs
1-2-4	Low Temperature Resistance		Temperature: -55±3℃ Relative Humidity: 0% / Time: 1000hrs Measured after exposure in the room condition for 24hrs

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BSCH00100505 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

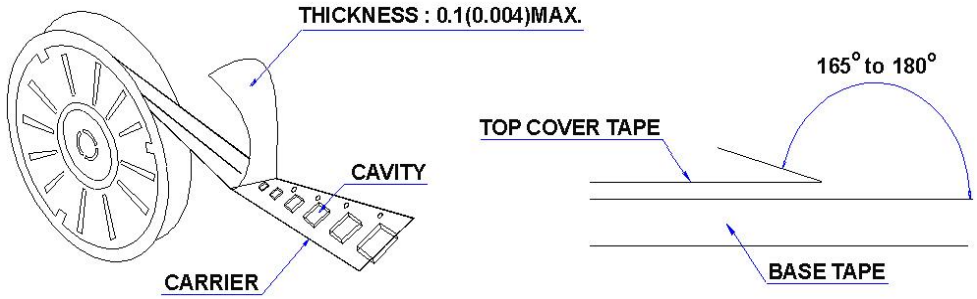
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BSCH00100505 Series Specification

11 Packaging:

11.1 Packaging -Cover Tape

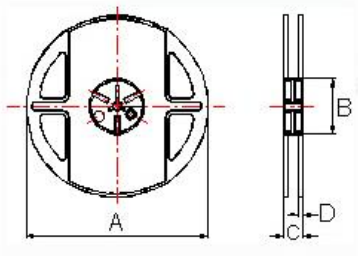
The force for tearing off cover tape is 10 to 100 grams in the arrow direction.



11.2 Packaging Quantity

TYPE	PCS/REEL
100505	10000

11.3 Reel Dimensions



Dimensions in mm

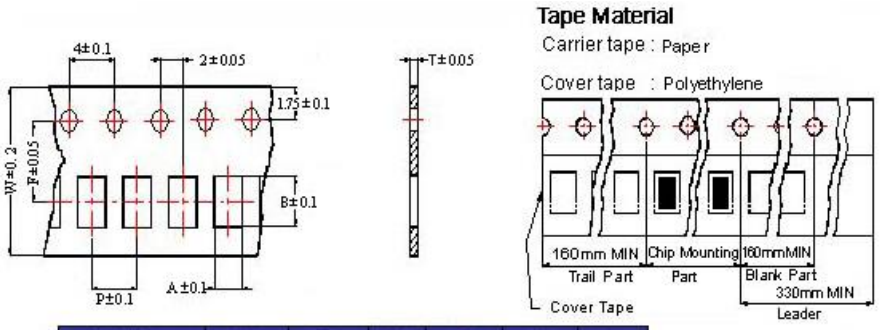
TYPE	A	B	C	D
100505	178	60	12	1.5

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BSCH00100505 Series Specification

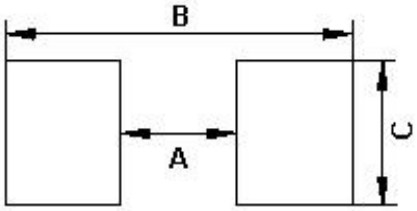
11 Packaging:

11.4 Tape Dimensions in mm



TYPE	A	B	T	W	P	F
100505	0.62	1.12	0.60	8	2	3.5

12 Recommended Land Pattern:



Dimensions in mm

TYPE	A	B	C
100505	0.4	1.2 ~ 1.4	0.5

13 Note:

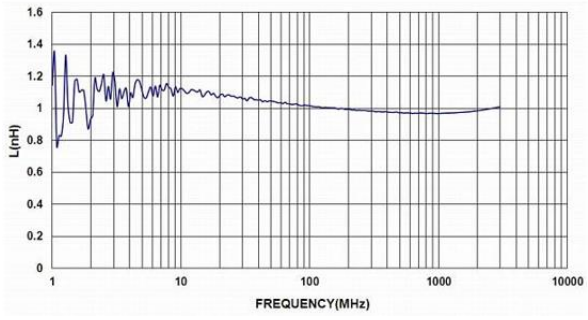
1. Please make sure that your product has been evaluated and confirmed against your specifications when our product is mounted to your product.
2. Do not knock nor drop.
3. All the items and parameters in this product specification have been prescribed on the premise that our product is used for the 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. Please keep the distance between transformer/coil and other components (refer to the standard IEC 950)
5. The moisture sensitivity level (MSL) of products is classified as level 1.

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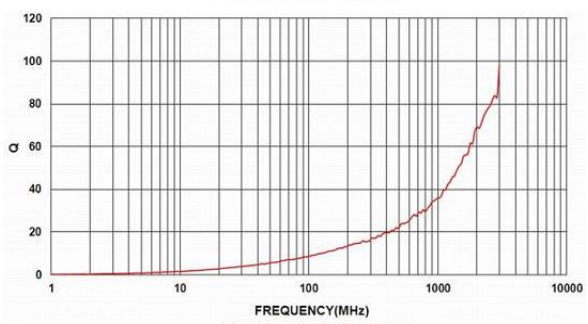
BSCH00100505 Series Specification

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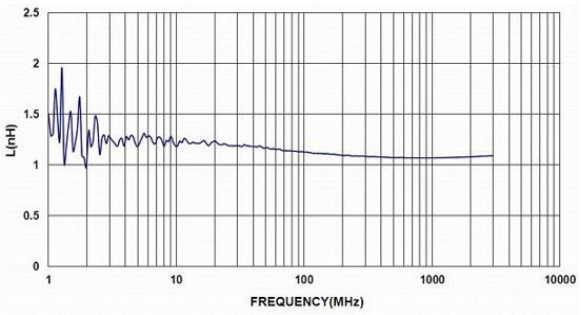
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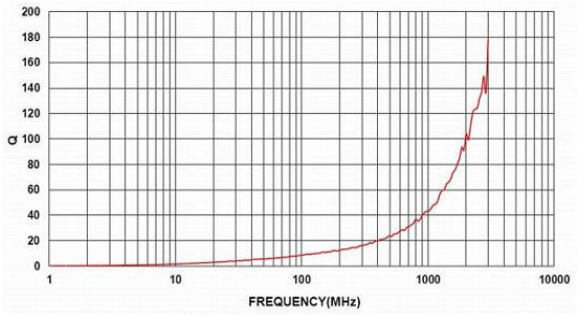
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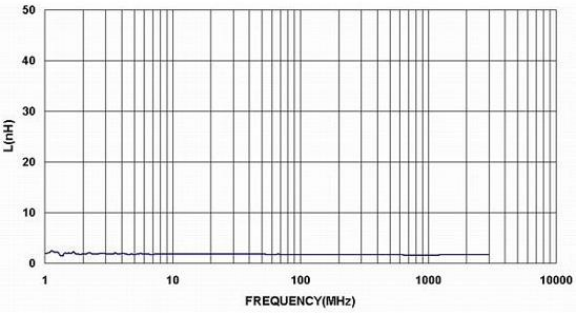
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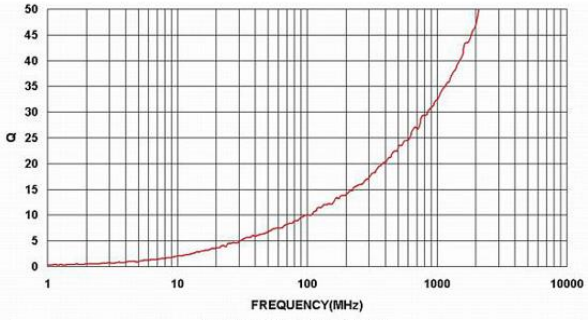
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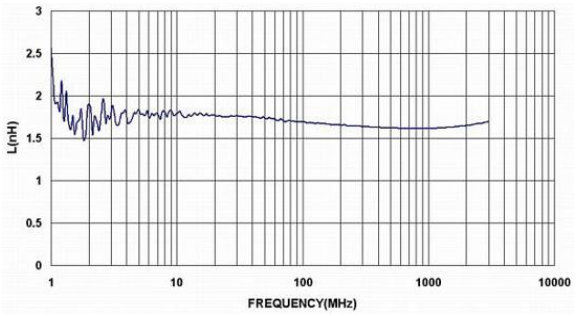
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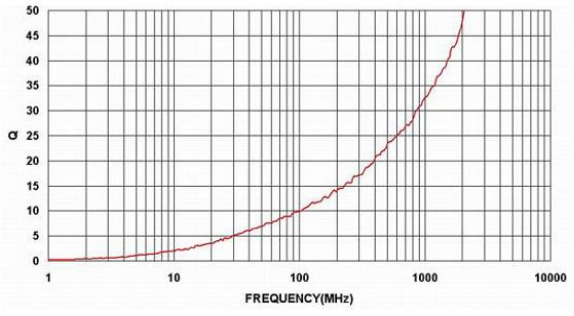
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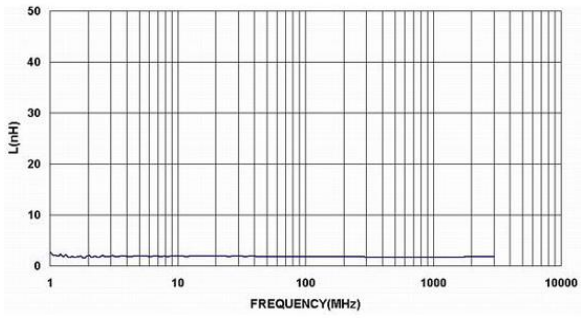


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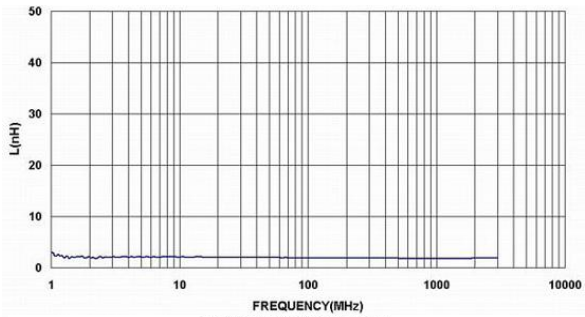
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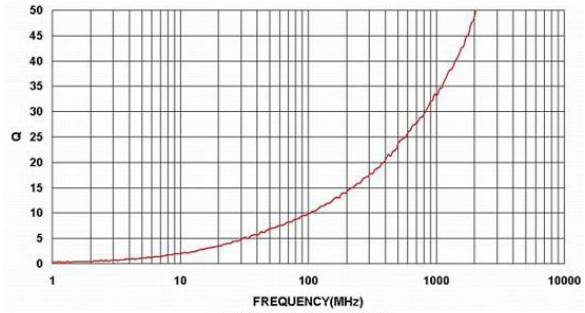
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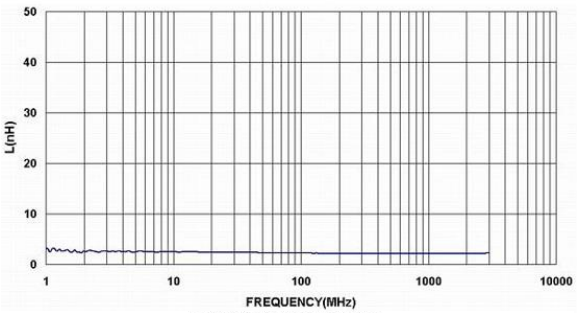
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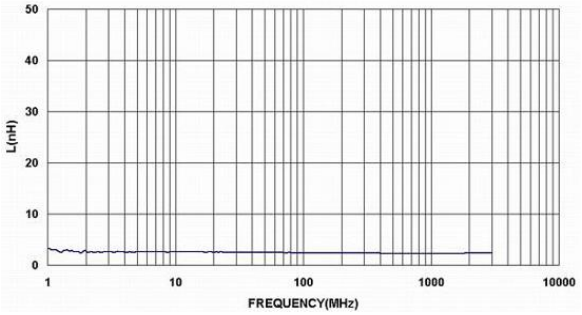
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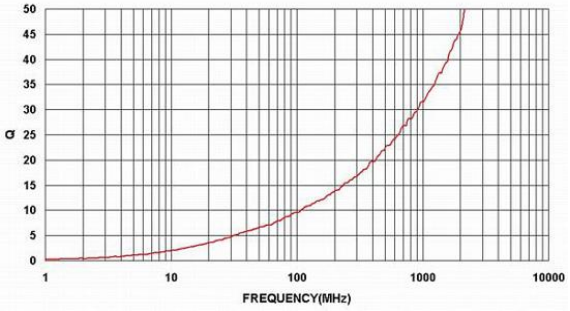
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BSCH001005052N4SSM



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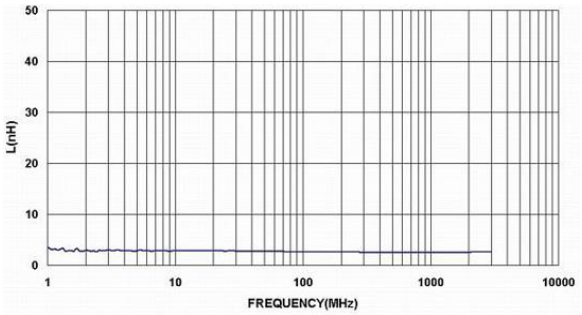


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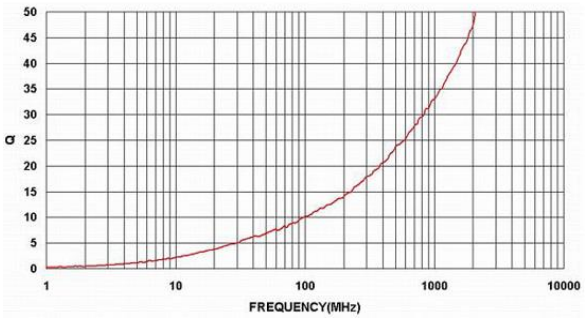
BSCH00100505 Series Specification

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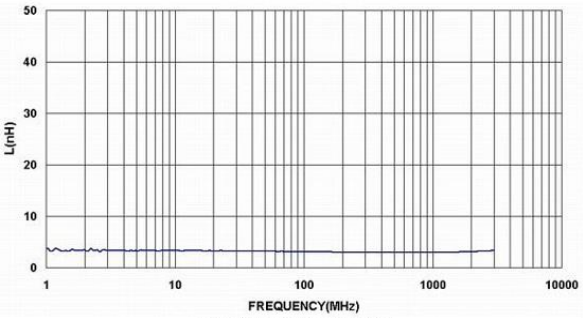
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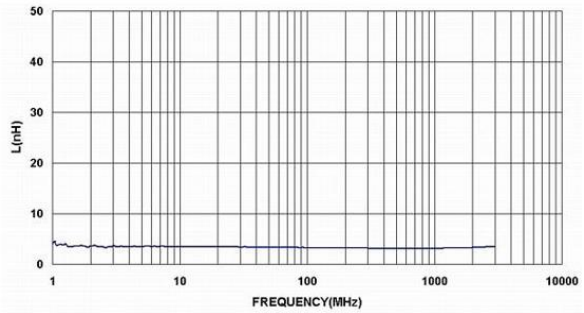
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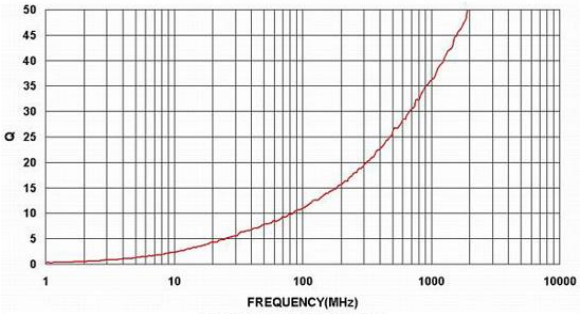
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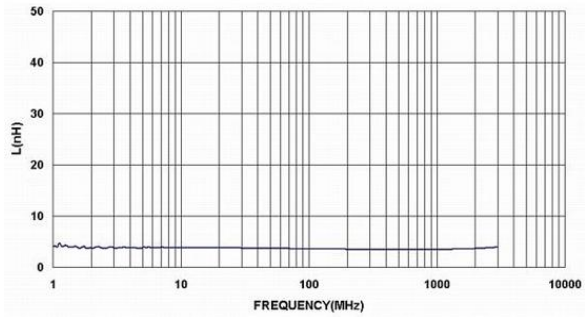
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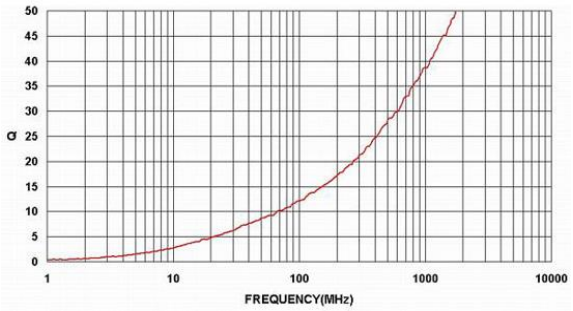
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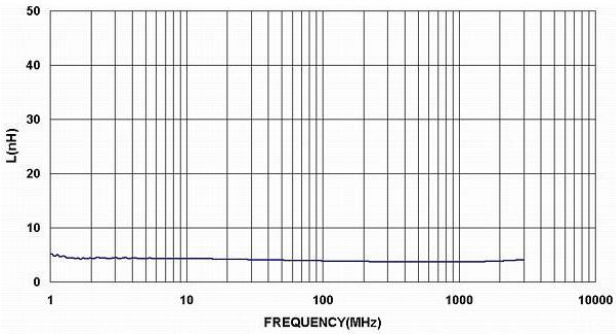


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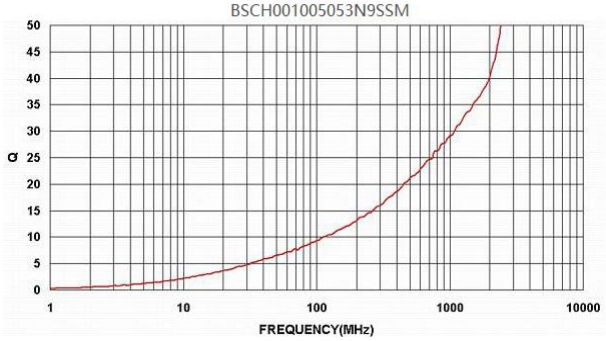
BSCH00100505 Series Specification

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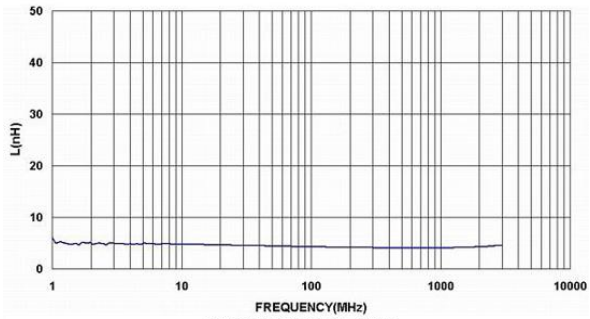
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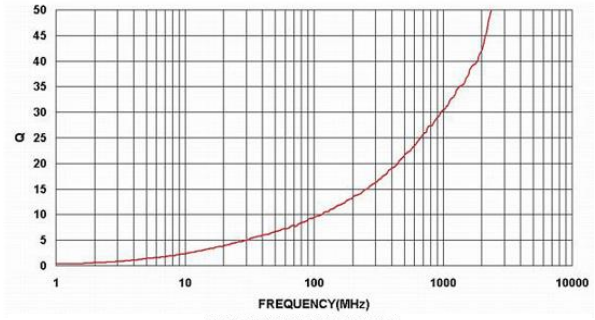
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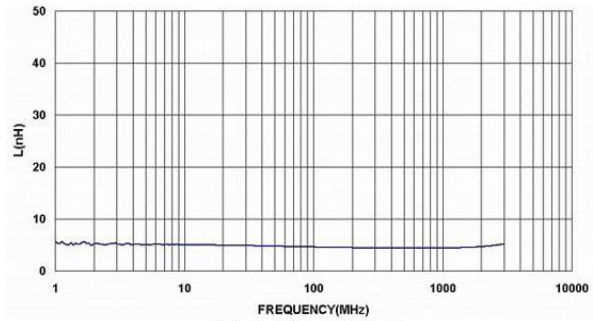
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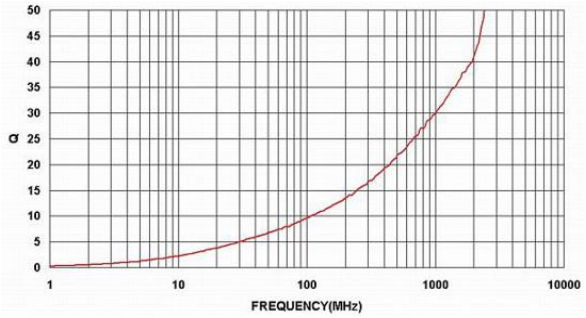
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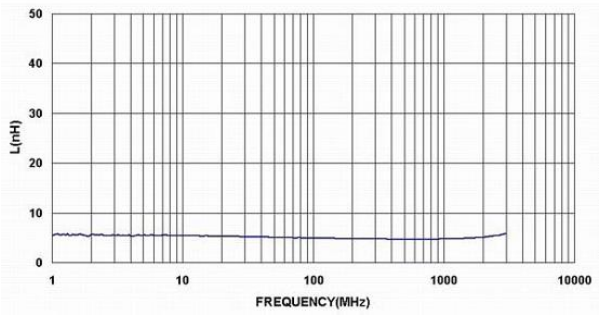
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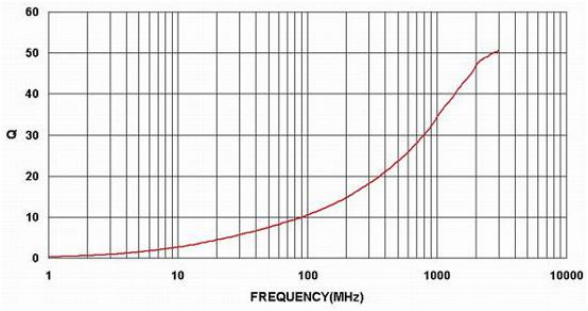
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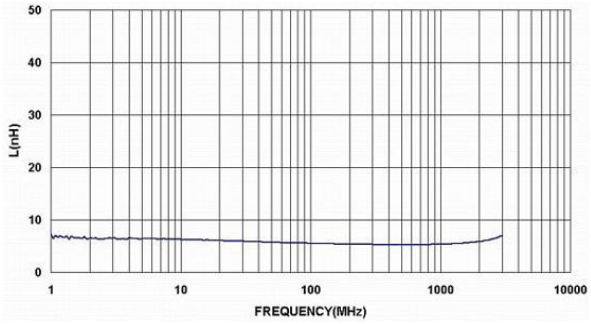


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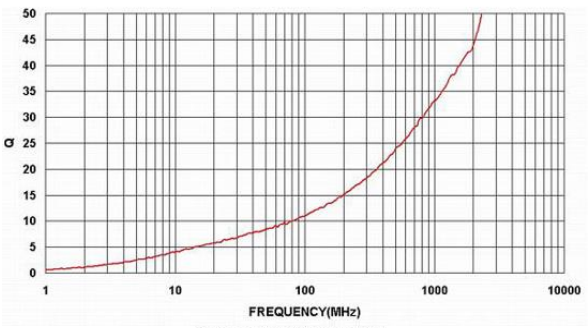
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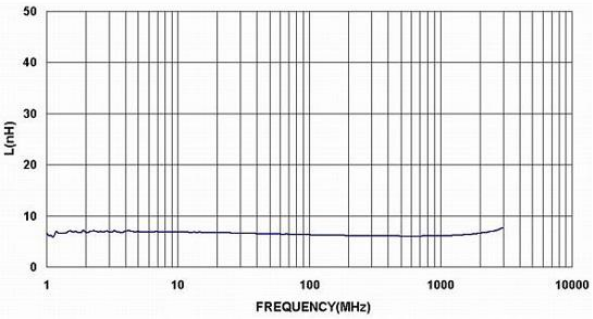
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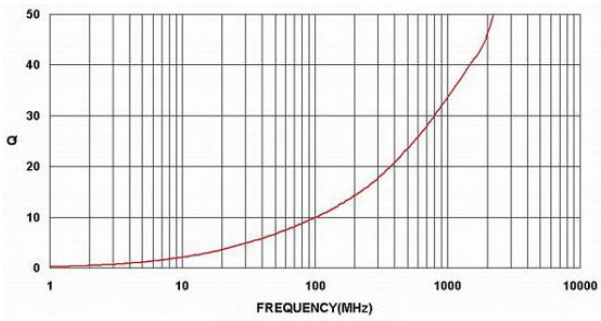
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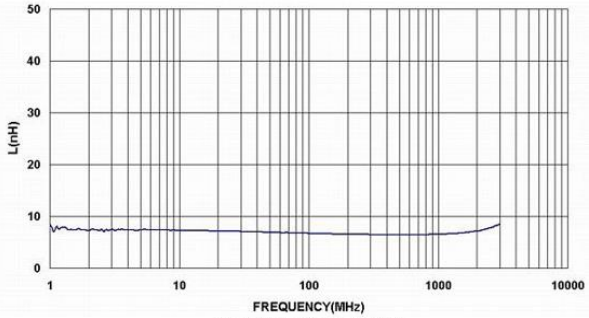
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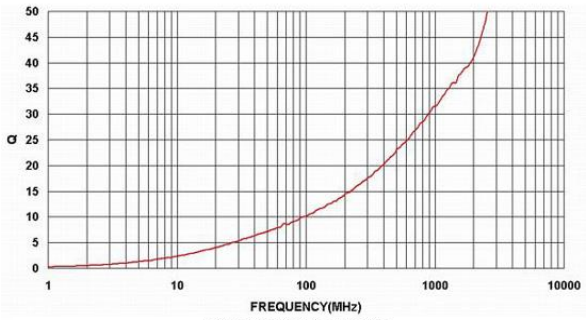
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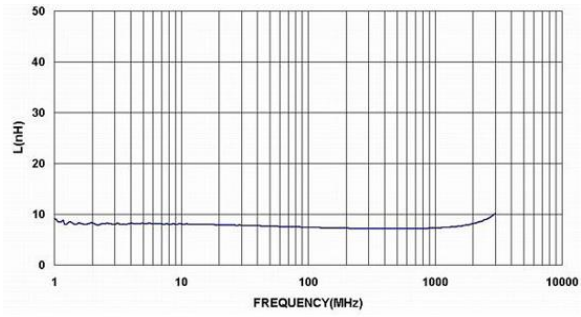
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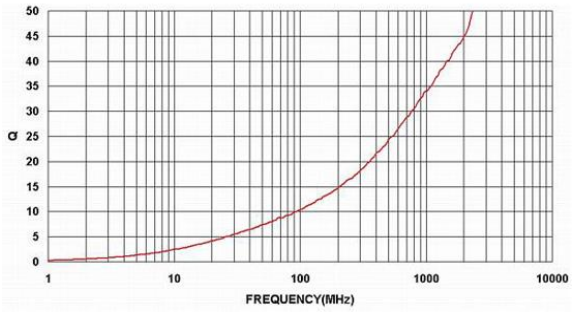
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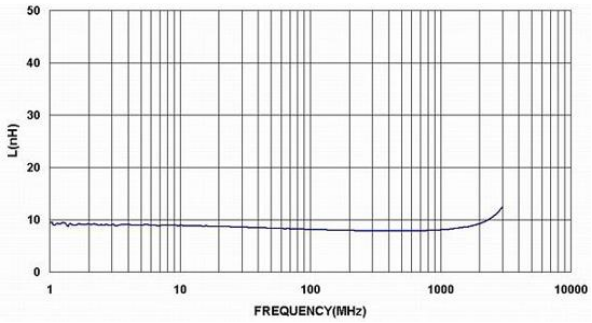


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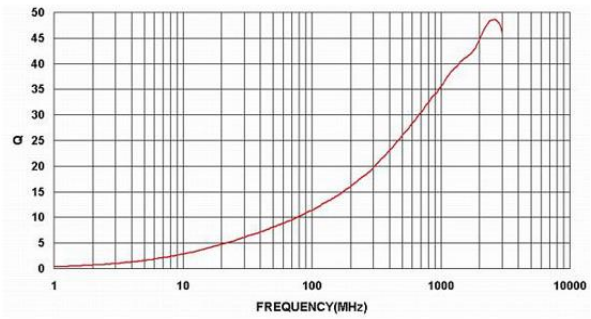
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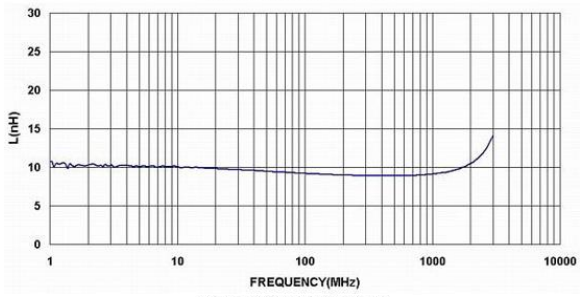
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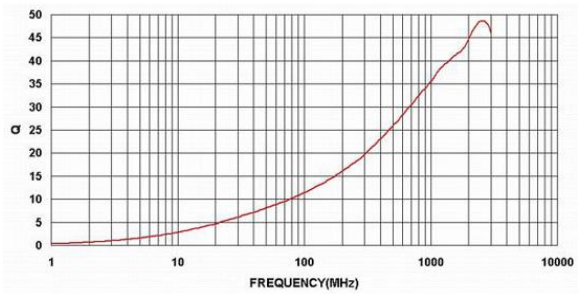
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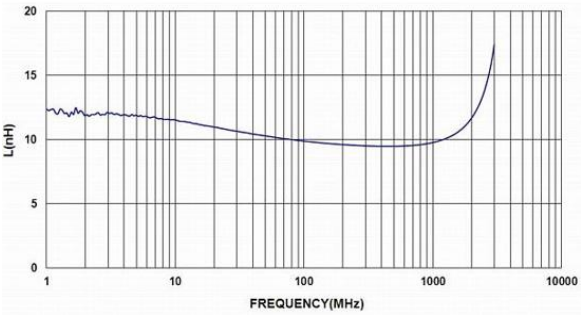
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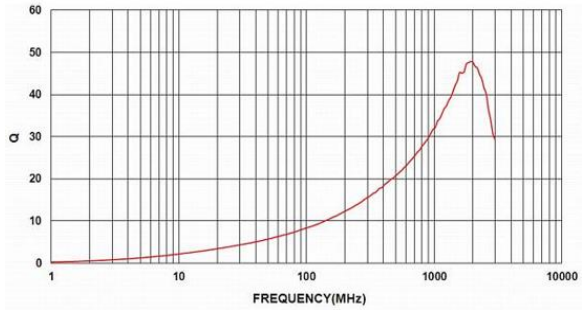
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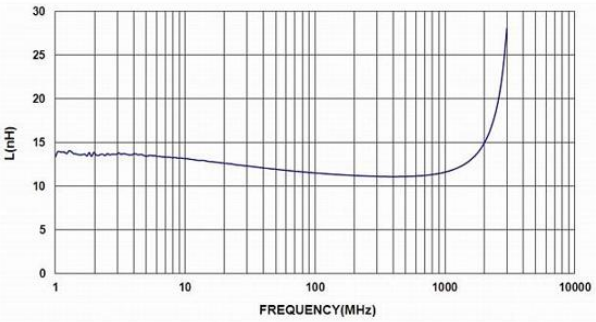
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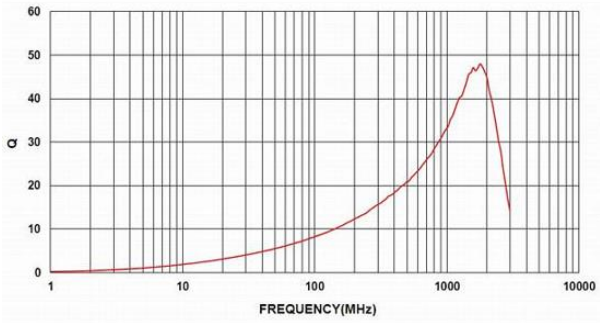
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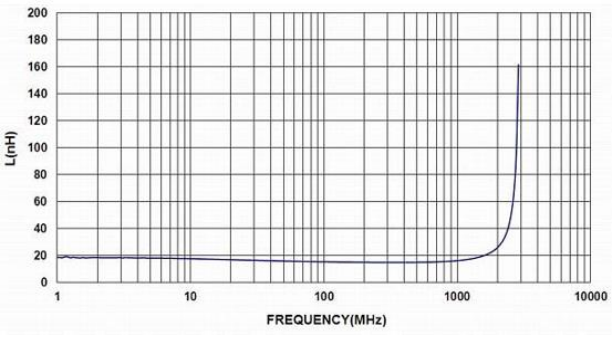
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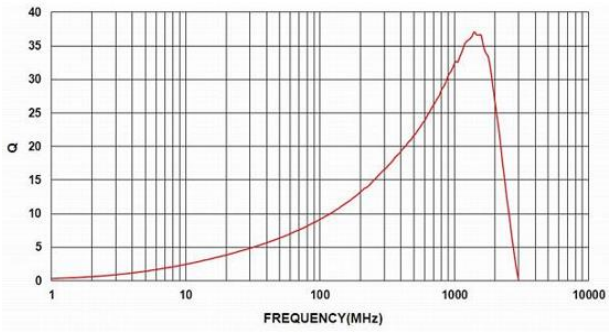
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