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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

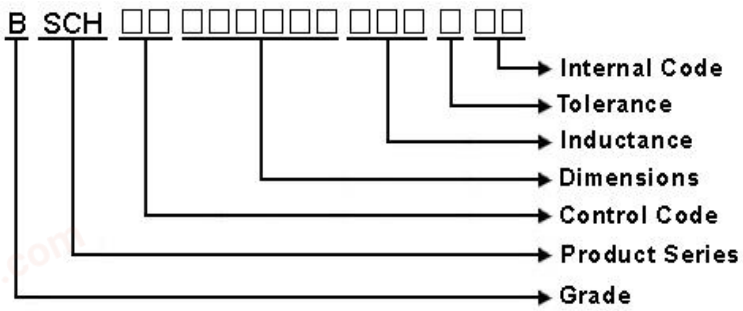


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BSCH00160808 Series Specification

1 Scope:
This specification applies to Multilayer ceramic chip inductors

2 Part Numbering:

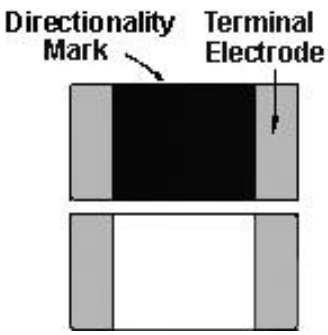


3 Rating:

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

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

4 Marking:



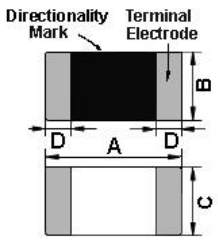
5 Standard Testing Condition

	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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BSCH00160808 Series Specification

6 Configuration and Dimensions:



Dimensions in mm

TYPE	160808
A	1.6±0.15
B	0.8±0.15
C	0.8±0.15
D	0.3±0.20

Net Weight (grms)

Size Code	Net Weight (grms)
BSCH00160808	0.0032

7 Electrical Characteristics:

Part No.	Inductance (nH)	L,Q Test Freq.	Q Min.	SRF (MHz)Typ.	RDC (Ω)Max.	IDC (mA)Max.	Tolerance
BSCH001608081N0□00	1	100 MHz,200 mV	8	10000	0.1	600	S
BSCH001608081N2□00	1.2	100 MHz,200 mV	8	10000	0.1	600	S
BSCH001608081N5□00	1.5	100 MHz,200 mV	8	8000	0.1	600	S
BSCH001608081N6□00	1.6	100 MHz,200 mV	8	8000	0.1	600	S
BSCH001608081N8□00	1.8	100 MHz,200 mV	8	8000	0.1	600	S
BSCH001608082N2□00	2.2	100 MHz,200 mV	8	7200	0.1	600	S
BSCH001608082N7□00	2.7	100 MHz,200 mV	10	6200	0.1	600	S
BSCH001608083N0□00	3	100 MHz,200 mV	10	5200	0.12	600	S
BSCH001608083N3□00	3.3	100 MHz,200 mV	10	5200	0.12	600	S,K
BSCH001608083N6□00	3.6	100 MHz,200 mV	10	5000	0.14	600	S
BSCH001608083N9□00	3.9	100 MHz,200 mV	10	5000	0.14	600	S,K
BSCH001608084N3□00	4.3	100 MHz,200 mV	10	4750	0.16	600	S,K
BSCH001608084N7□00	4.7	100 MHz,200 mV	10	4750	0.16	600	S,K
BSCH001608085N1□00	5.1	100 MHz,200 mV	10	4100	0.18	600	S,K
BSCH001608085N6□00	5.6	100 MHz,200 mV	10	4100	0.18	600	S,K
BSCH001608086N2□00	6.2	100 MHz,200 mV	10	3750	0.22	600	J,K
BSCH001608086N8□00	6.8	100 MHz,200 mV	10	3750	0.22	600	J,K
BSCH001608087N5□00	7.5	100 MHz,200 mV	10	3300	0.24	600	J,K
BSCH001608088N2□00	8.2	100 MHz,200 mV	10	3300	0.24	600	J,K
BSCH0016080810N□00	10	100 MHz,200 mV	12	3000	0.26	600	J,K
BSCH0016080812N□00	12	100 MHz,200 mV	12	2600	0.28	600	J,K
BSCH0016080815N□00	15	100 MHz,200 mV	12	2500	0.32	600	J,K
BSCH0016080816N□00	16	100 MHz,200 mV	12	2400	0.35	600	J,K
BSCH0016080818N□00	18	100 MHz,200 mV	12	2400	0.35	600	J,K
BSCH0016080822N□00	22	100 MHz,200 mV	12	2000	0.4	500	J,K

NOTE: □-tolerance J=±5% / K=±10% / S=±0.3nH

1.Operating temperature range - 5 5℃ ~ 1 2 5℃(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 : 0nH

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Part No.	Inductance (nH)	L,Q Test Freq.	Q Min.	SRF (MHz)Typ.	RDC (Ω)Max.	IDC (mA)Max.	Tolerance
BSCH0016080827N□00	27	100 MHz,200 mV	12	1900	0.45	500	J,K
BSCH0016080833N□00	33	100 MHz,200 mV	12	1600	0.55	400	J,K
BSCH0016080839N□00	39	100 MHz,200 mV	12	1400	0.6	400	J,K
BSCH0016080847N□00	47	100 MHz,200 mV	12	1300	0.7	400	J,K
BSCH0016080856N□00	56	100 MHz,200 mV	12	1100	0.75	400	J,K
BSCH0016080862N□00	62	100 MHz,200 mV	12	1050	0.85	400	J,K
BSCH0016080868N□00	68	100 MHz,200 mV	12	1050	0.85	400	J,K
BSCH0016080875N□00	75	100 MHz,200 mV	12	900	1	300	J,K
BSCH0016080882N□00	82	100 MHz,200 mV	12	900	1	300	J,K
BSCH00160808R10□00	100	100 MHz,200 mV	12	770	1.2	300	J,K
BSCH00160808R12□00	120	50 MHz,200 mV	8	650	1.3	300	J,K
BSCH00160808R15□00	150	50 MHz,200 mV	8	550	1.7	250	J,K
BSCH00160808R18□00	180	50 MHz,200 mV	8	520	1.9	250	J,K
BSCH00160808R22□00	220	50 MHz,200 mV	8	500	2	250	J,K
BSCH00160808R27□00	270	50 MHz,200 mV	8	470	2.2	150	J,K
BSCH00160808R33□00	330	50 MHz,200 mV	8	320	2.8	100	J,K
BSCH00160808R39□00	390	50 MHz,200 mV	8	300	3	100	J,K

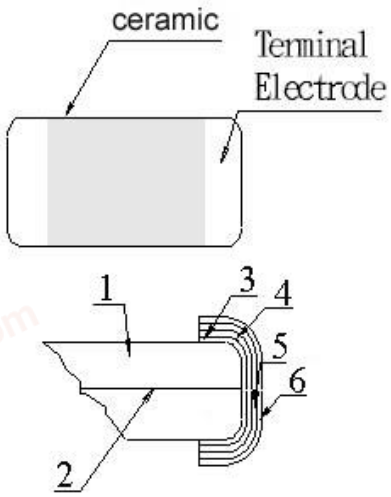
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8 BSCH00160808 Series

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**

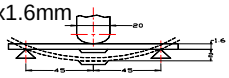
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9 Reliability Of Ceramic Multilayer Chip Inductor For High Freq.

1-1.Mechanical Performance

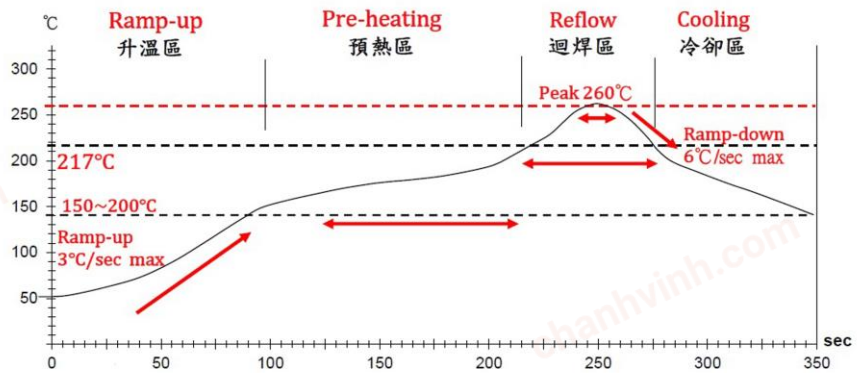
No	Item	Specification	Test Method
1-1-1	Flexure Strength	The forces applied on the right conditions must not damage the terminal electrode and the Ceramic.	Test device shall be soldered on the substrate Substrate Dimension: 100x40x1.6mm Deflection: 2.0mm Keeping Time: 30sec *For 100505, substrate dimension 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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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

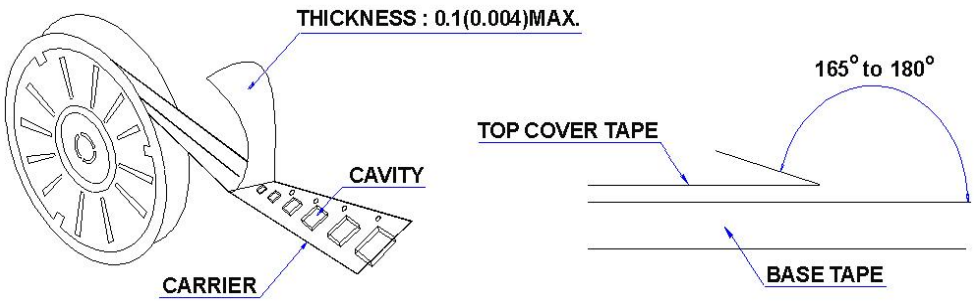
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BSCH00160808 Series Specification

11 Packaging:

11.1 Packaging -Cover Tape

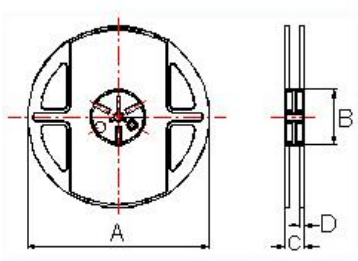
The force for tearing off cover tape is 10 to 100 grams in the arrow direction.



11.2 Packaging Quantity

TYPE	PCS/REEL
160808	4000

11.3 Reel Dimensions



Dimensions in mm

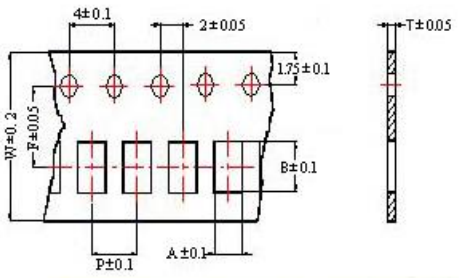
TYPE	A	B	C	D
160808	178	60	12	1.5

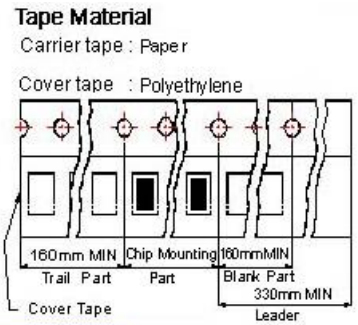
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11 Packaging:

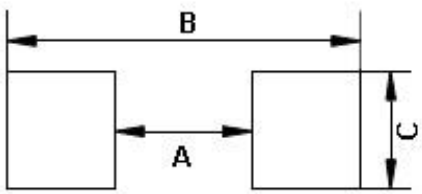
11.4 Tape Dimensions in mm





TYPE	A	B	T	W	P	F
160808	1.00	1.80	0.95	8	4	3.5

12 Recommended Land Pattern:



Dimensions in mm

TYPE	A	B	C
160808	0.7 ~ 0.8	1.8 ~ 2.0	0.6 ~ 0.8

13 Note:

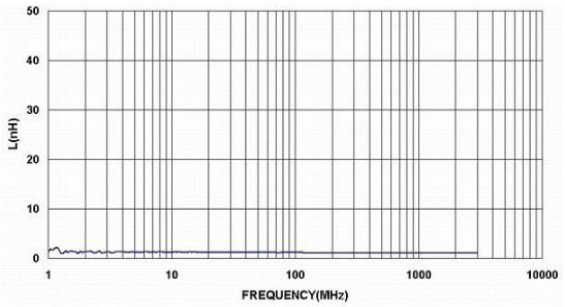
1. Please make sure that your product has been evaluated and confirmed against your specifications when our product is mounted to your product.
2. Do not knock nor drop.
3. All the items and parameters in this product specification have been prescribed on the premise that our product is used for the 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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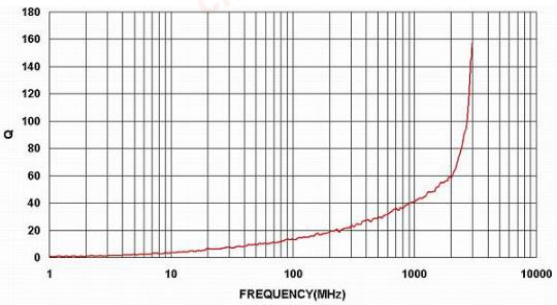
BSCH00160808 Series Specification

14 Graph:

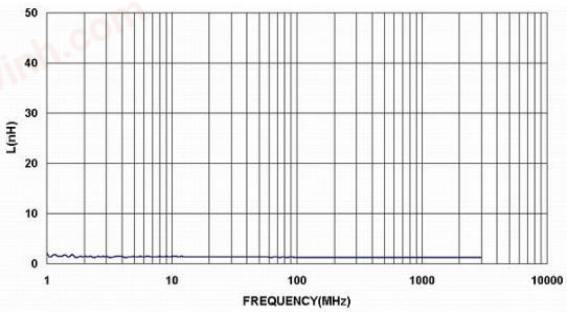
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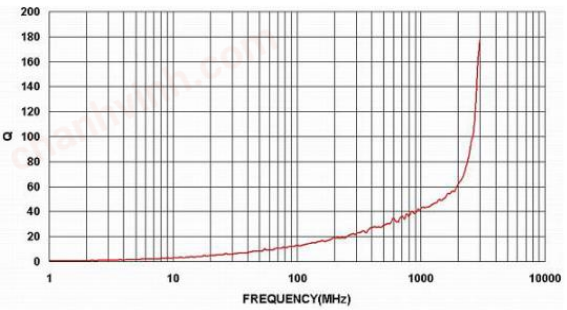
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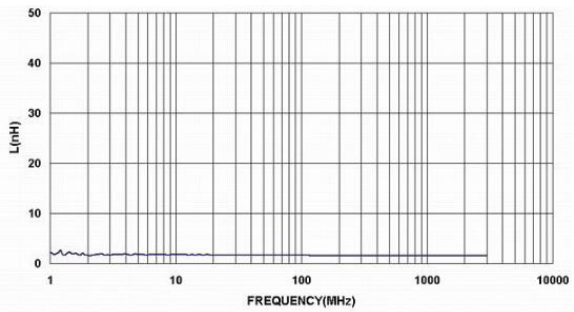
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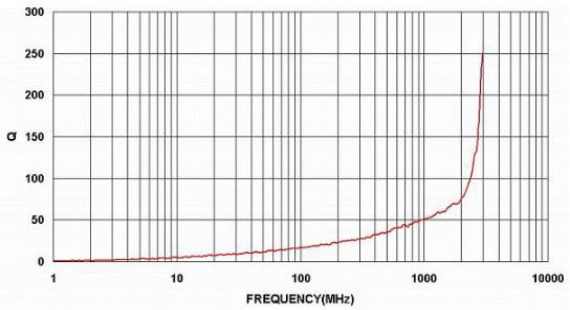
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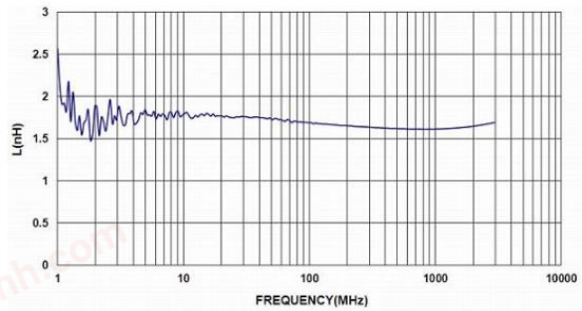
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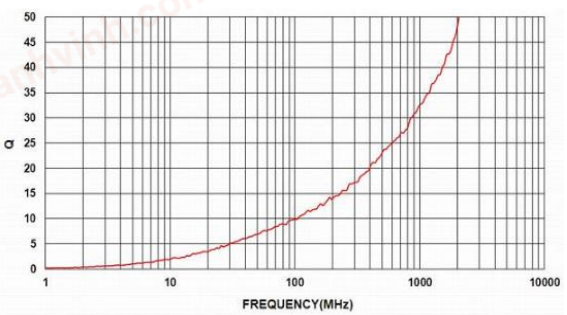
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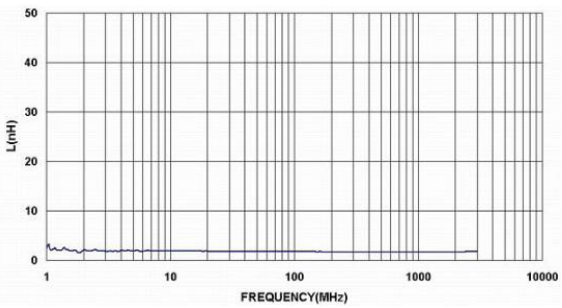


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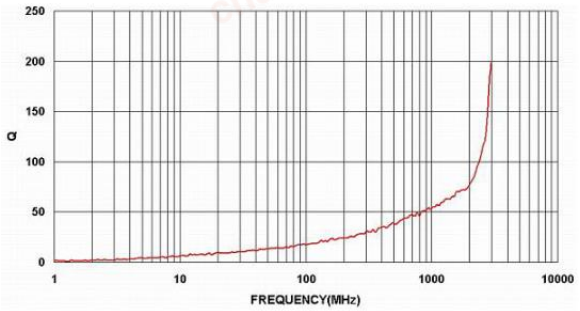
BSCH00160808 Series Specification

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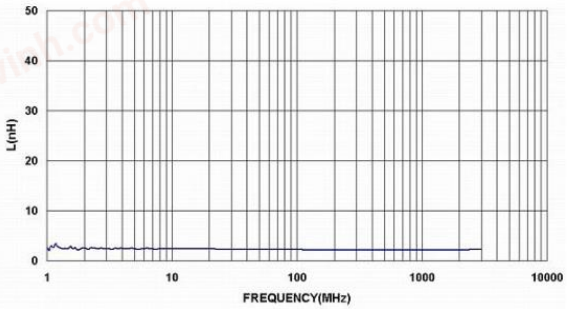
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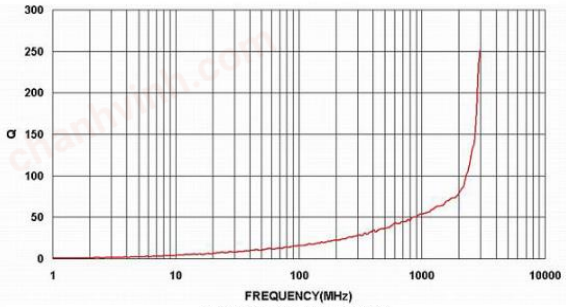
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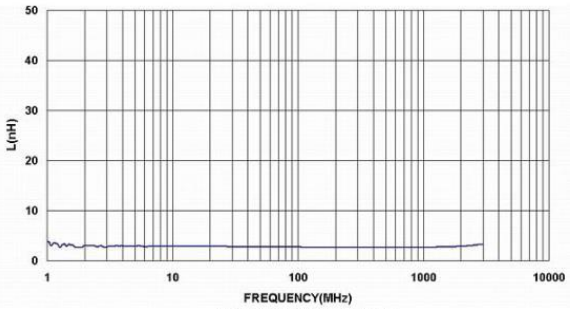
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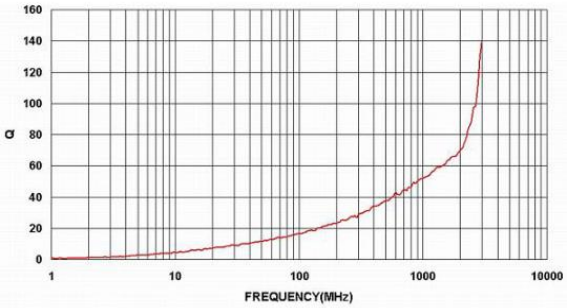
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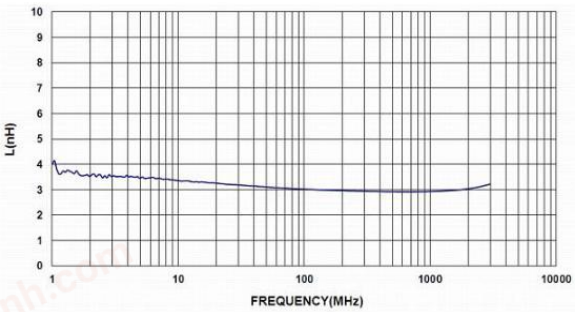
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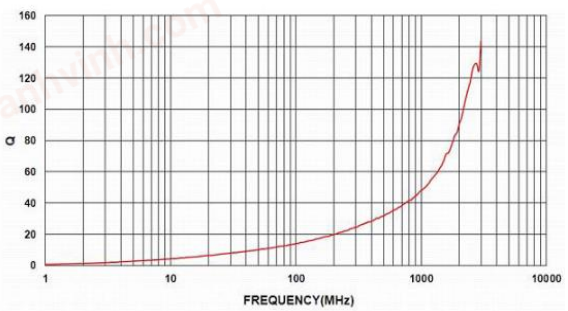
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BSCH001608083N0S00



BSCH001608083N0S00

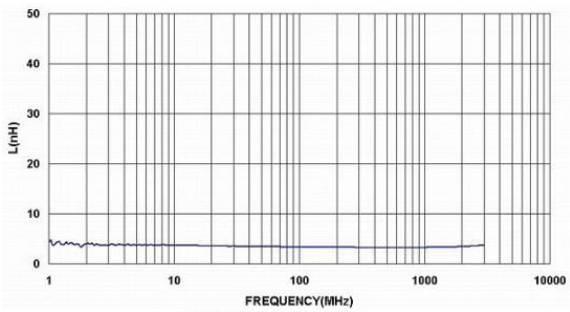


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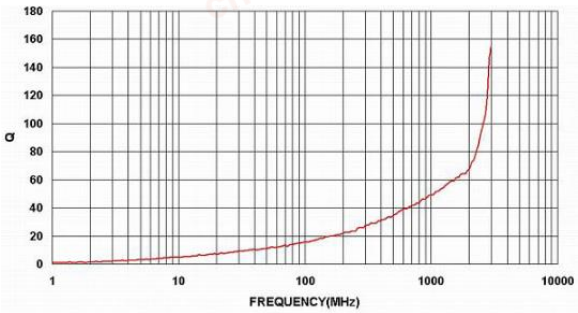
BSCH00160808 Series Specification

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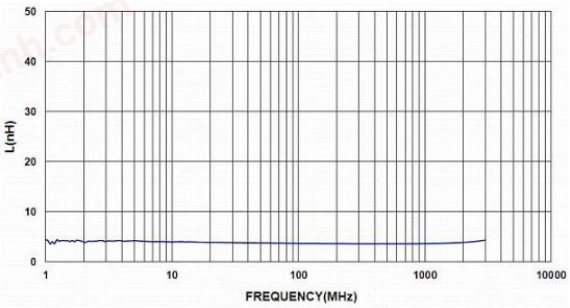
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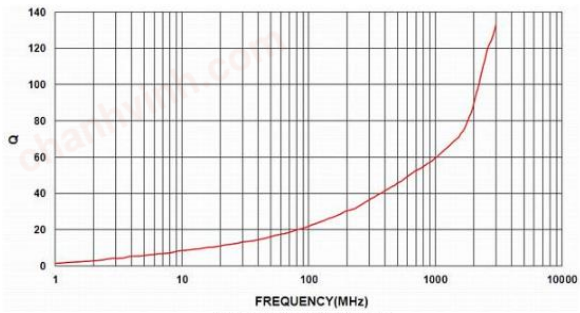
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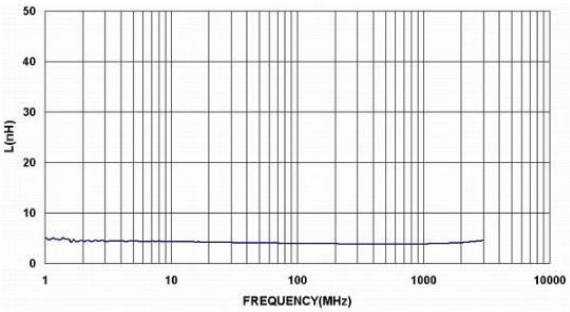
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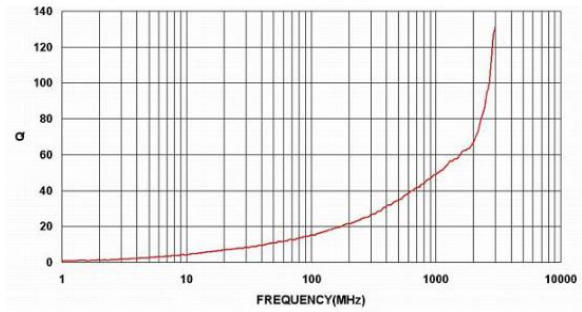
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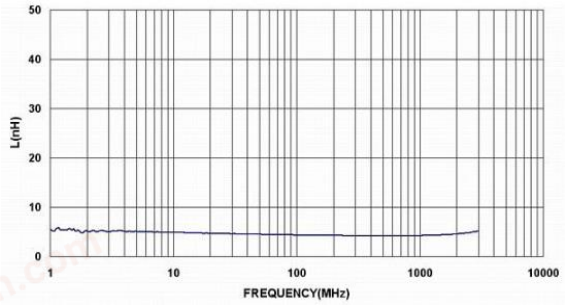
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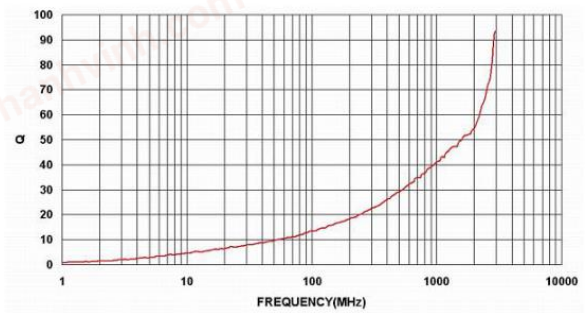
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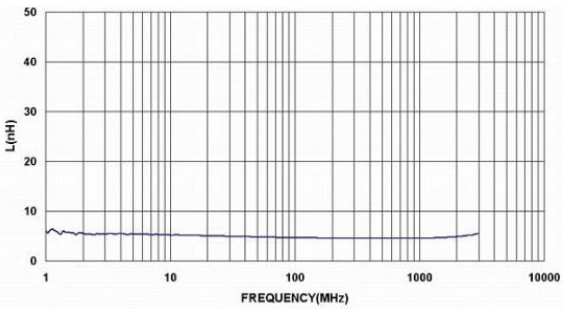


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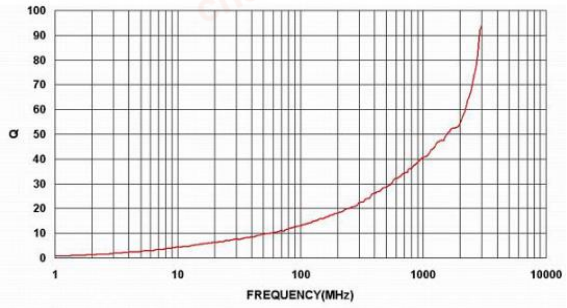
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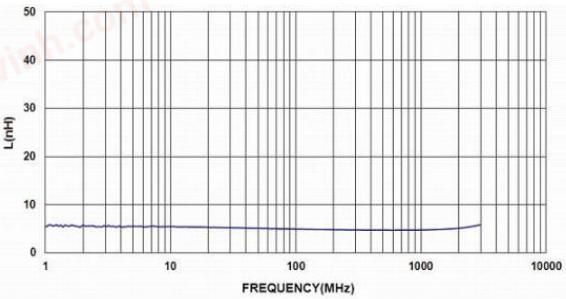
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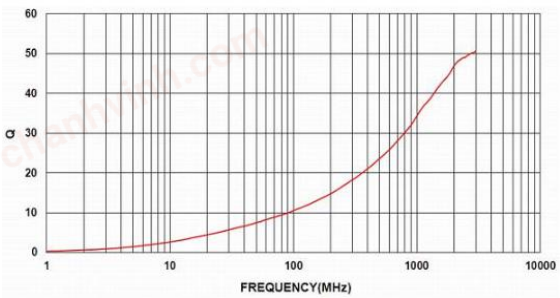
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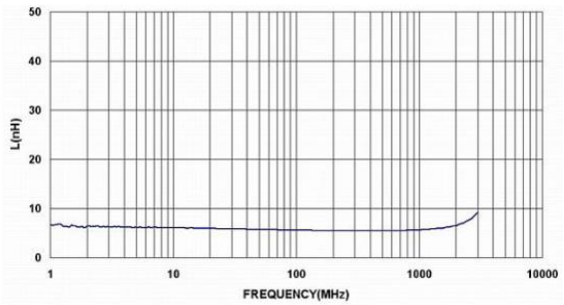
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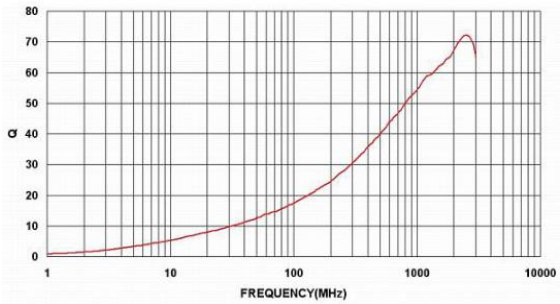
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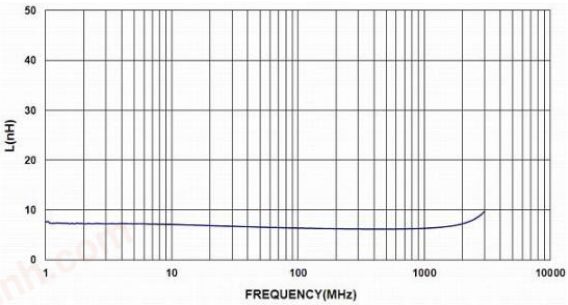
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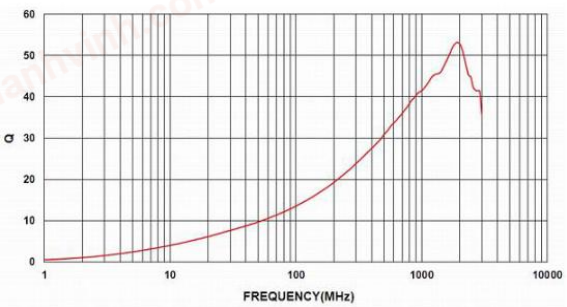
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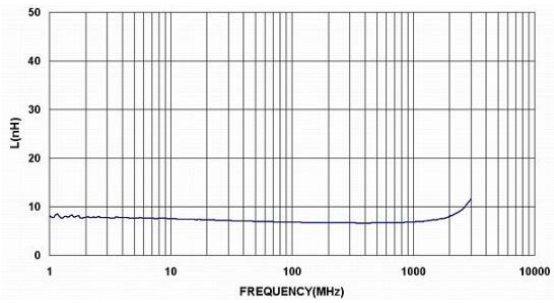


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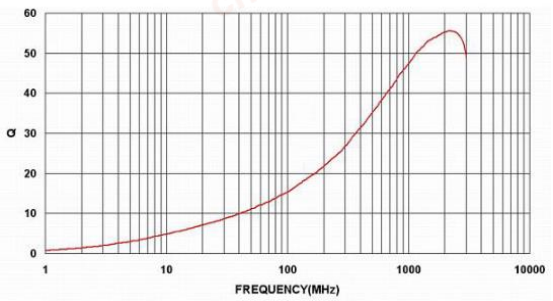
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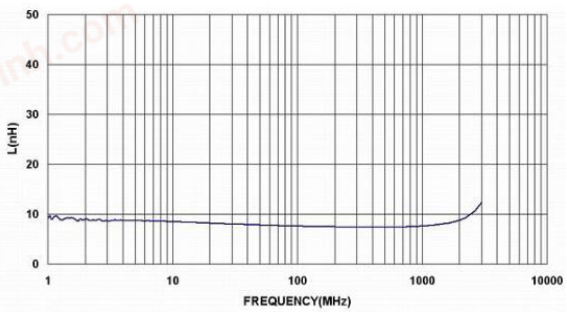
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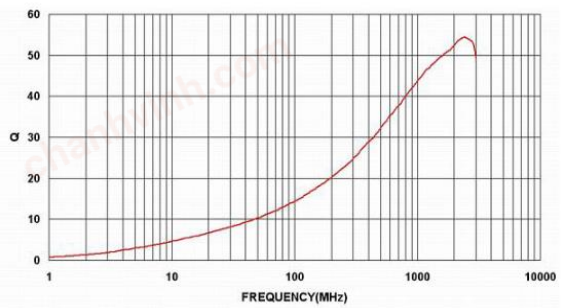
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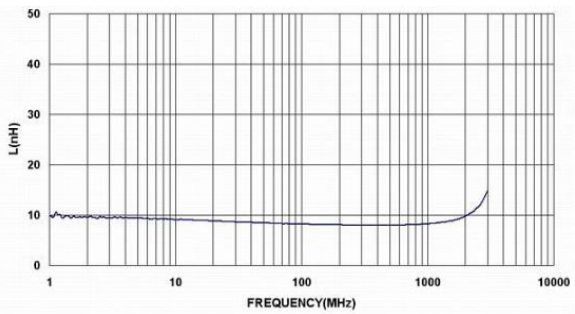
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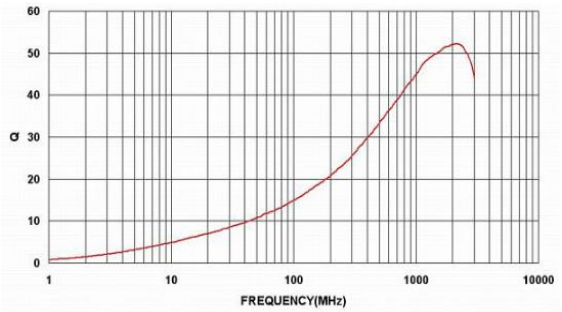
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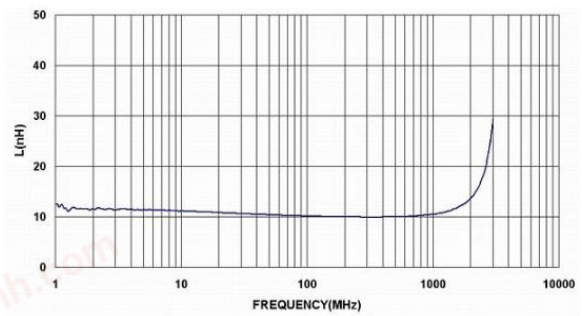
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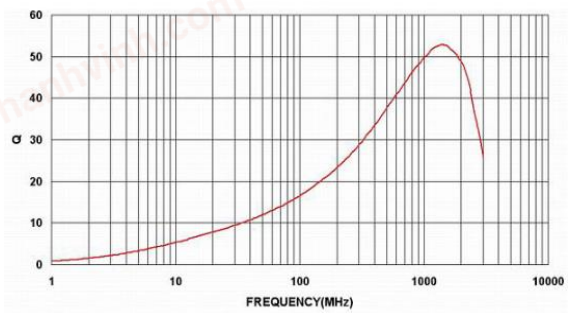
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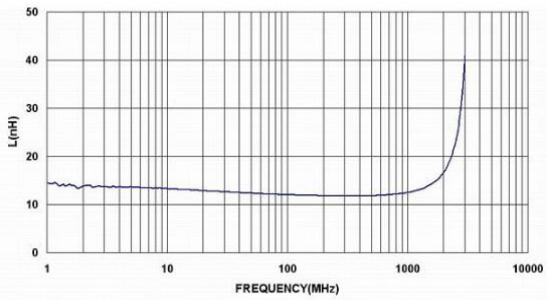


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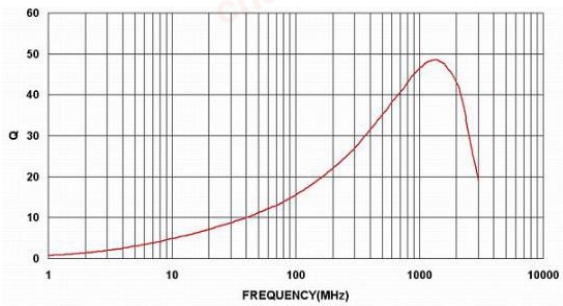
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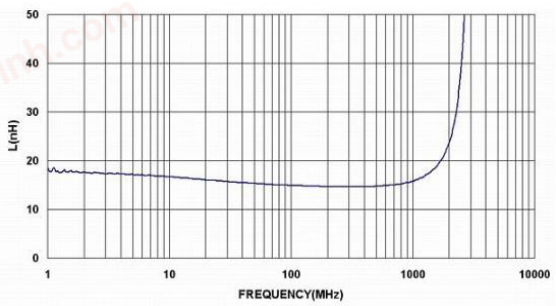
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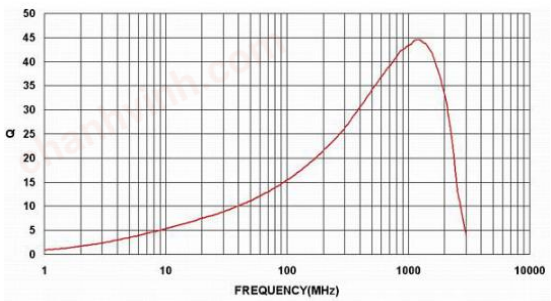
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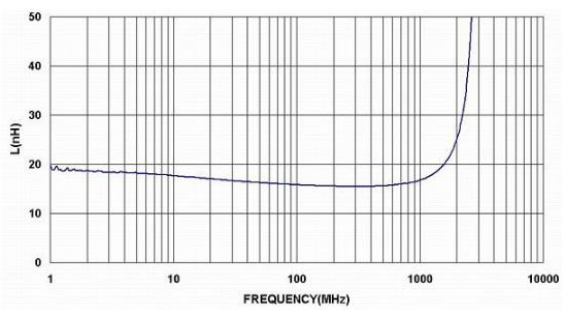
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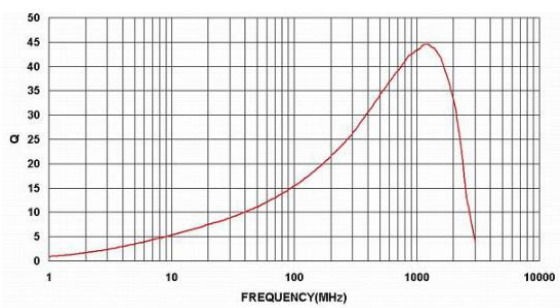
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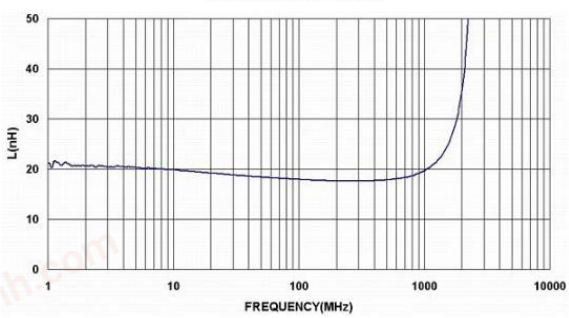
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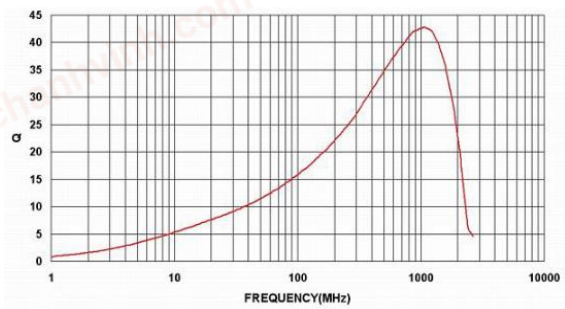
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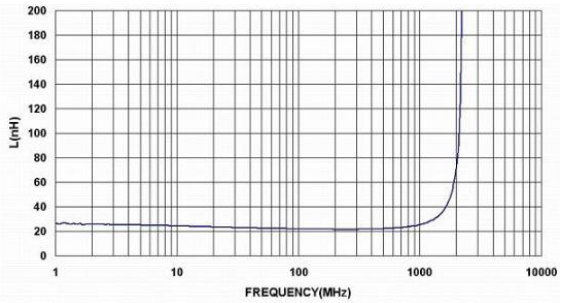


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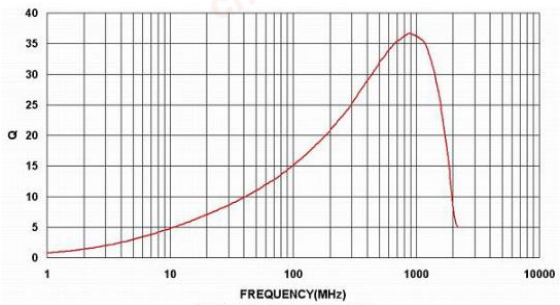
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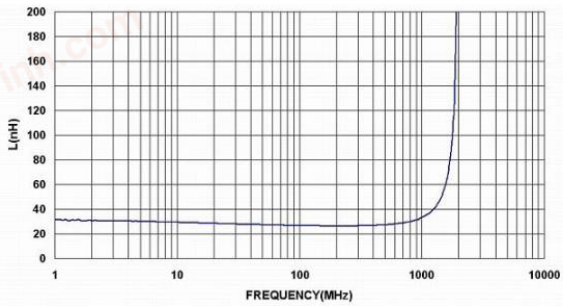
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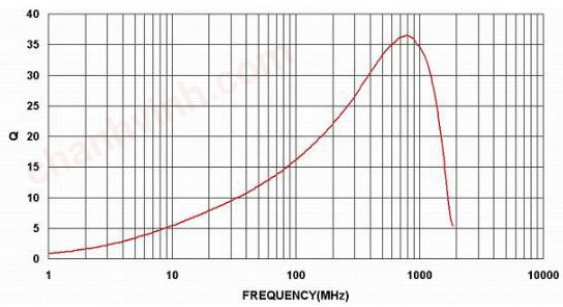
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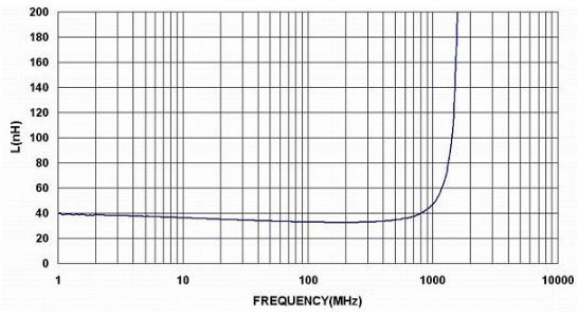
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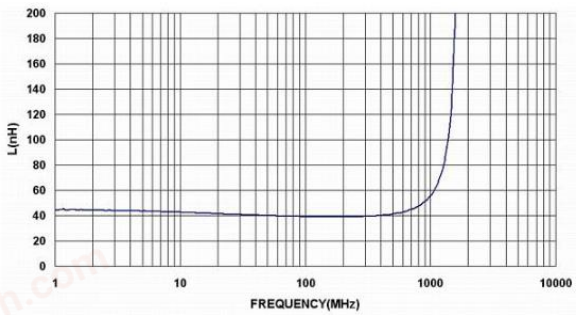
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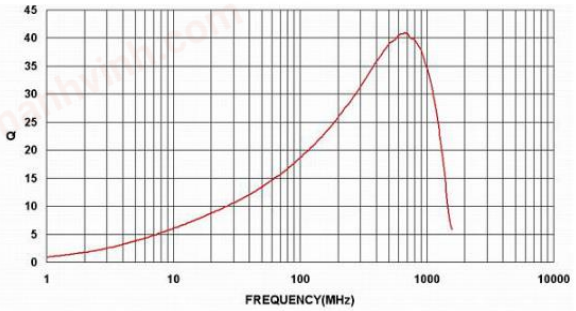
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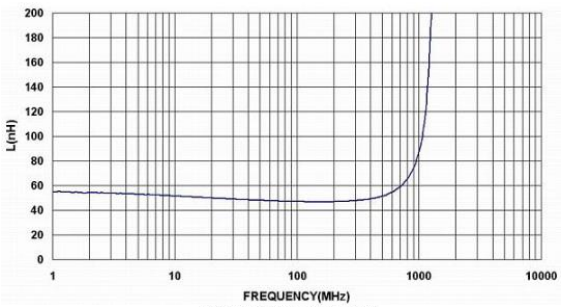


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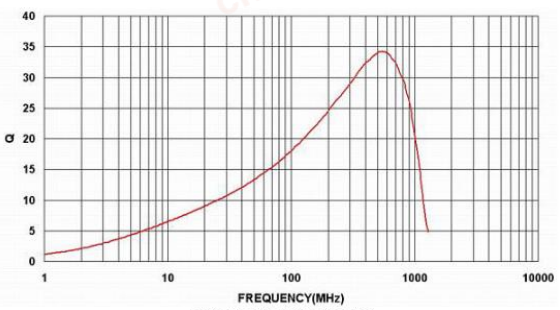
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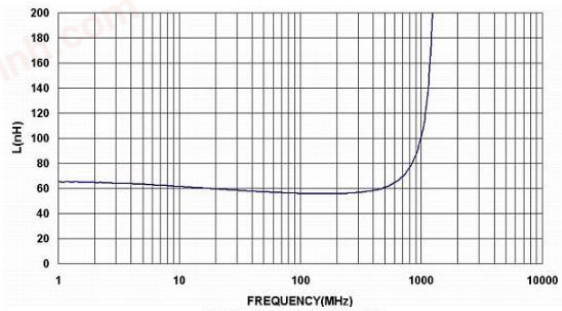
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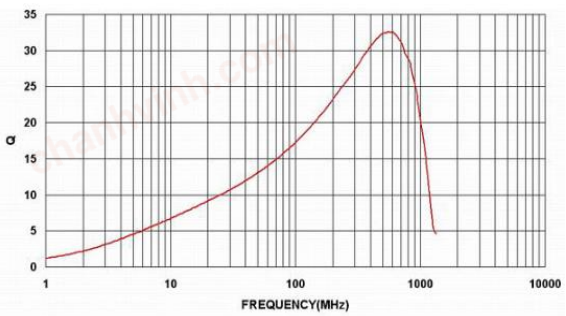
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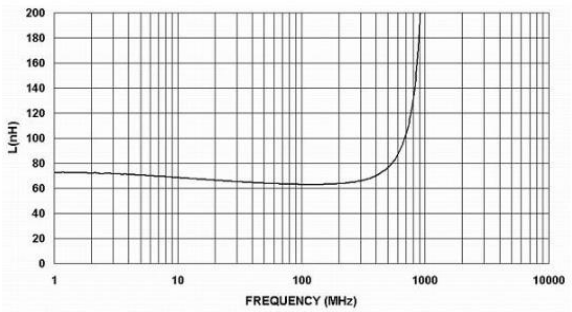
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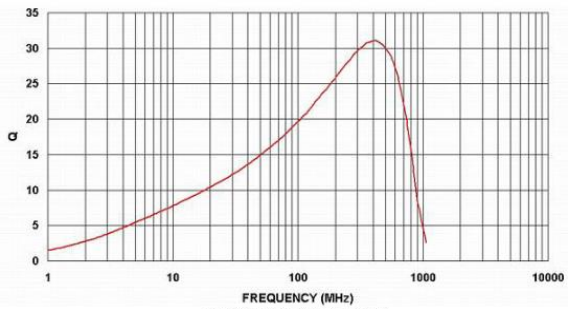
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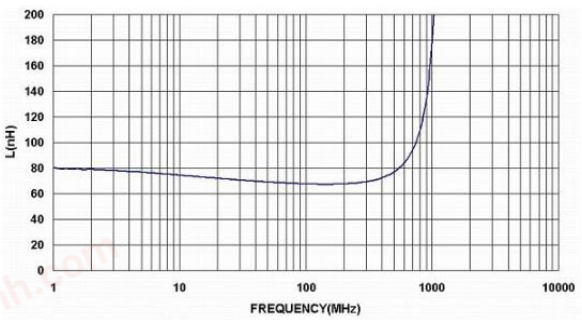
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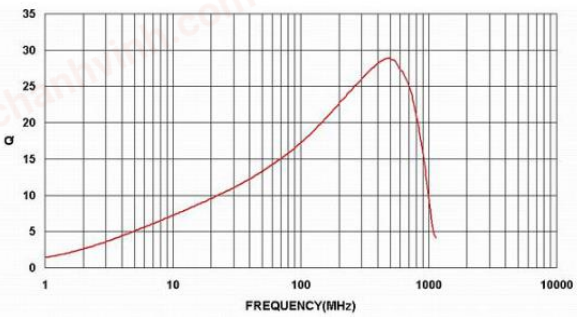
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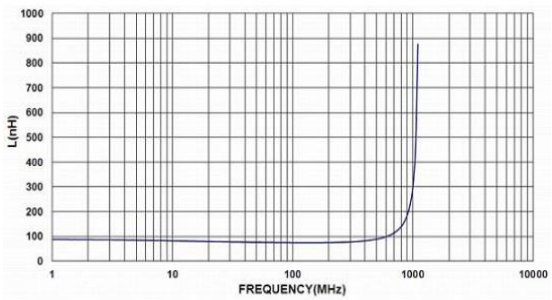


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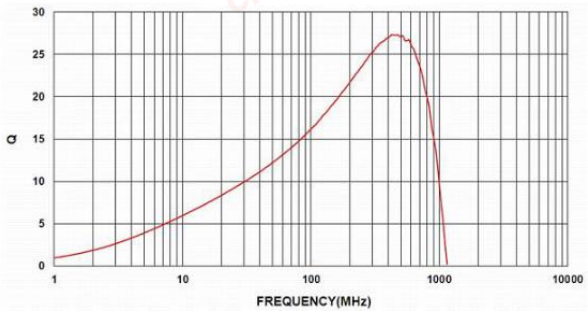
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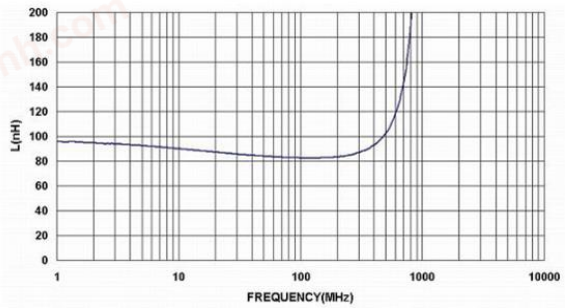
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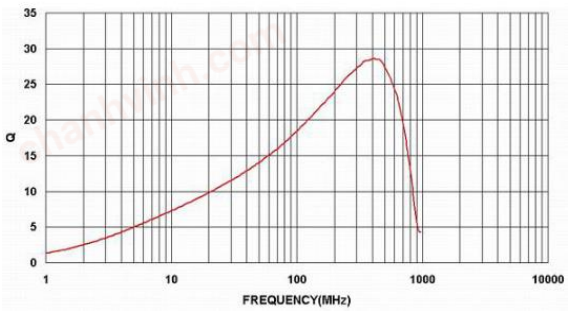
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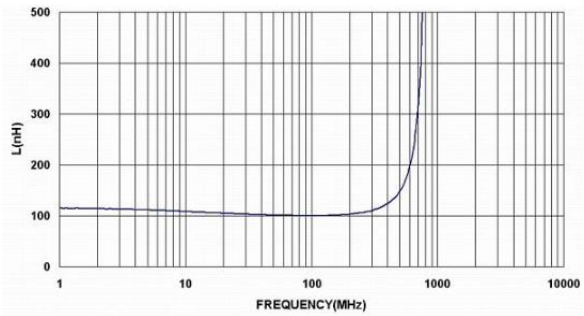
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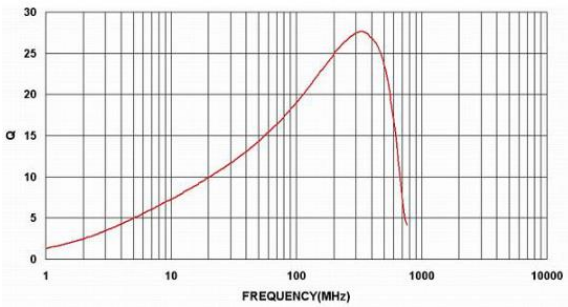
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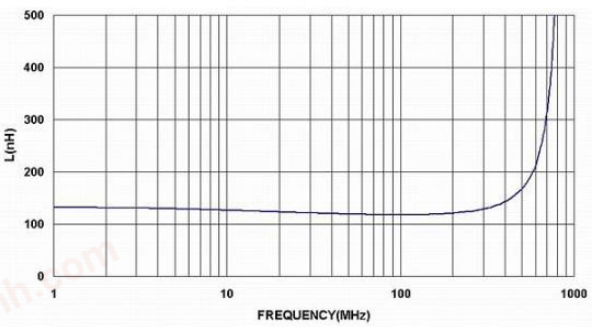
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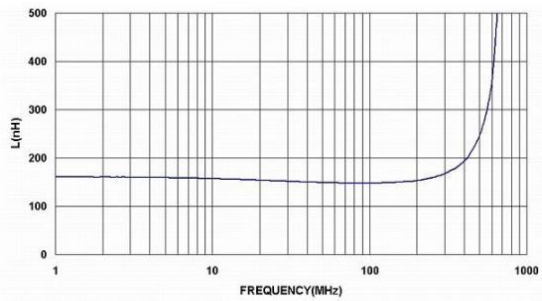


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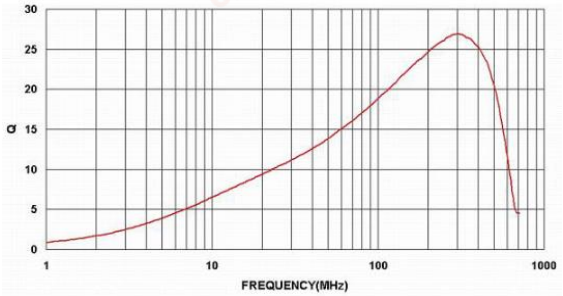
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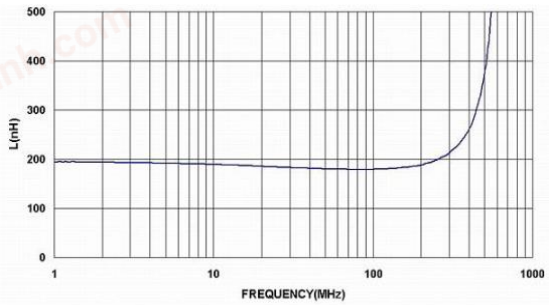
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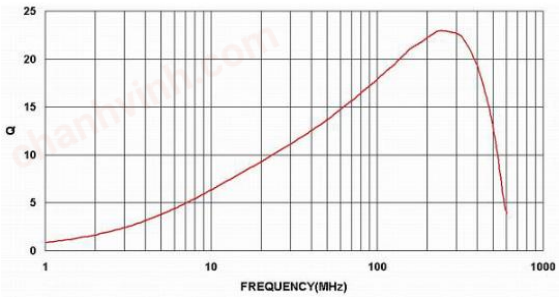
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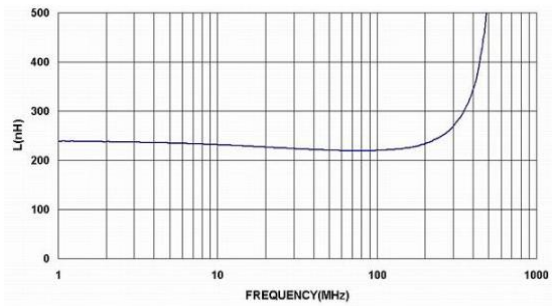
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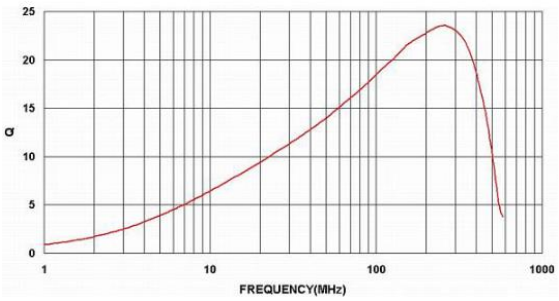
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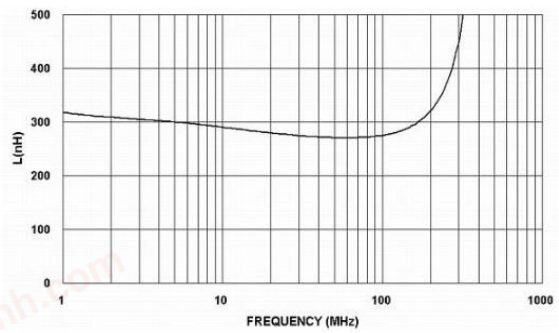
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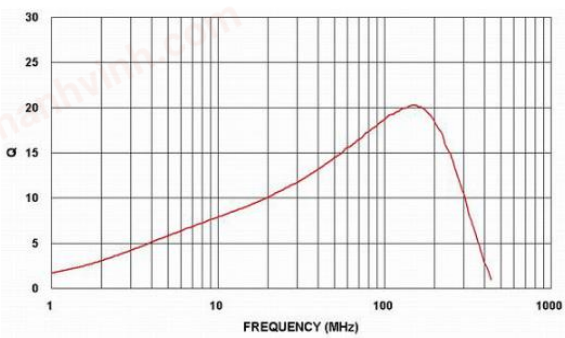
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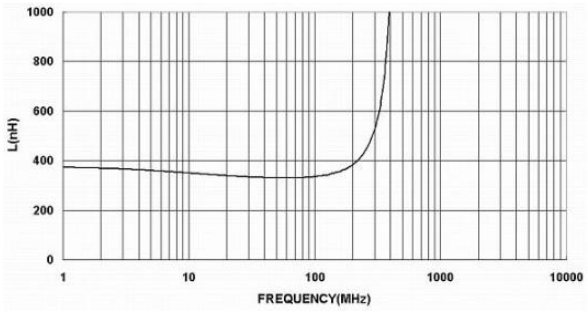


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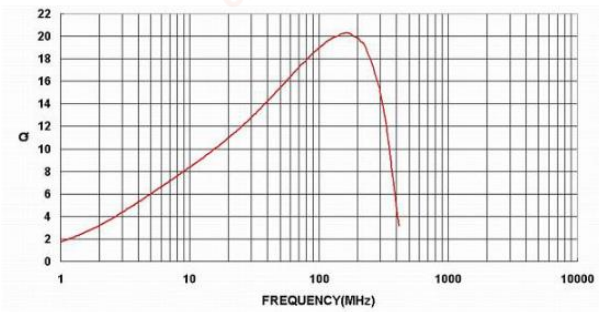
BSCH00160808 Series Specification

14 Graph:

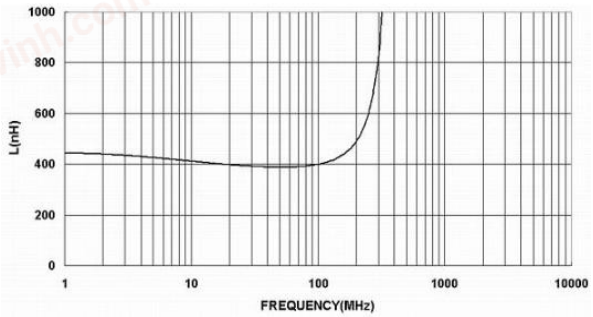
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