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EMI Ferrite Bead

BBPY Series

Overview

EMI ferrite beads are made of ferrite material, which can block high-frequency noise while allowing required signals to pass through, providing high impedance and noise attenuation to improve signal integrity/efficiency and reduce power loss.

Benefits

1. For Power Line
2. Compliance with EMI regulations.
3. Reduced power loss and improved system efficiency
4. Operating temperature range: -55 ~ +125°C
5. Improved signal integrity

Applications

1. Wearable device
2. Industrial
3. Communications
4. Consumer Electronics

Product Information

Series	Size Code (JIS/EIA)	Impedance (Ω)
BBPY	0603/0201 1005/0402 1608/0603 2012/0805 3216/1206 4532/1812	10 ~ 1500



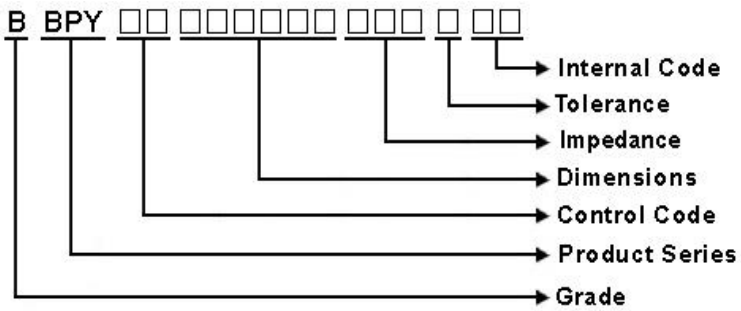
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BBPY00201209 Series Specification

1 Scope:
This specification applies to MULTILAYER FERRITE CHIP BEADS

2 Part Numbering:



3 Rating:

Operating Temperature: - 5 5 ℃ ~ 1 2 5 ℃(Including self - temperature rise)

Storage Temperature: - 5 5 ℃ ~ 1 2 5 ℃(after PCB)
- 5 ℃~4 0 ℃,Humidity 4 0 %~7 0 %(before PCB)

4 Marking:

No Marking

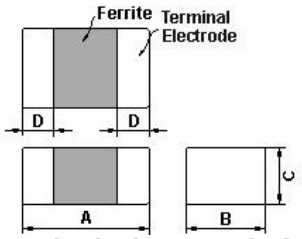
5 Standard Testing Condition

	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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6 Configuration and Dimensions:



Dimensions in mm

TYPE	201209
A	2.00±0.20
B	1.25±0.20
C	0.90±0.20
D	0.50±0.30

Net Weight (grms)

Size Code	Net Weight (grms)
201209	0.01231

7 Electrical Characteristics:

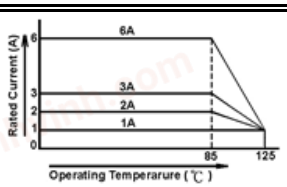
Part No.	Impedance (Ω)	Test Freq.	RDC (Ω)Max.	Rated Current (mA)Max.
BBPY00201209100□00	10	100 MHz,200 mV	0.01	6000
BBPY00201209110□00	11	100 MHz,200 mV	0.01	6000
BBPY00201209170□00	17	100 MHz,200 mV	0.02	5000
BBPY00201209300□00	30	100 MHz,200 mV	0.015	4000
BBPY00201209500□00	50	100 MHz,200 mV	0.025	3000
BBPY00201209600□00	60	100 MHz,200 mV	0.03	3000
BBPY00201209700□00	70	100 MHz,200 mV	0.04	3000
BBPY00201209800□00	80	100 MHz,200 mV	0.04	3000
BBPY00201209101□00	100	100 MHz,200 mV	0.04	3000
BBPY00201209121□00	120	100 MHz,200 mV	0.04	3000
BBPY00201209221□00	220	100 MHz,200 mV	0.08	2000
BBPY00201209301□00	300	100 MHz,200 mV	0.08	2000
BBPY00201209331□00	330	100 MHz,200 mV	0.08	2000
BBPY00201209471□00	470	100 MHz,200 mV	0.1	2000
BBPY00201209601□00	600	100 MHz,200 mV	0.1	2000
BBPY00201209102□00	1000	100 MHz,200 mV	0.12	1500
BBPY00201209152□00	1500	100 MHz,200 mV	0.3	1000

NOTE: □-tolerance Y=±25% / T=±30%

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

2.Rate Current : Applied the current to coils, the temperature rise shall not be more than 30℃

3.As for BBPY type. Rated Current is derated as right figure depending on the operating temprature.



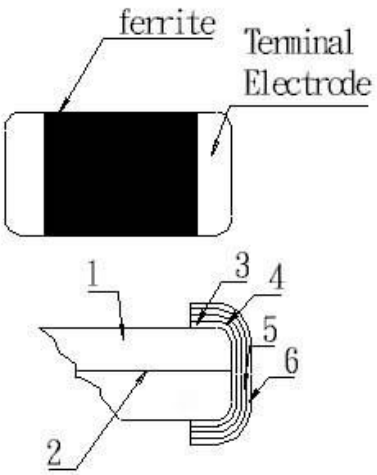
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8 BBPY00201209 Series

8.1 Construction:



8.2 Material List:

No	Part	Material
1	Ferrite Substance	NiO-CuO-ZnO-Ferrite
2	Silver electrode	Ag
3	Silver electrode	Ag
4	Cu plating	Cu
5	Ni plating	Ni
6	Sn plating	Sn

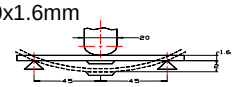
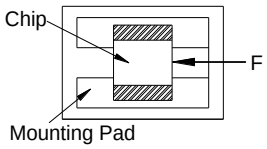
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9 Reliability Of Ferrite Multilayer Chip Bead

1-1.Mechanical Performance

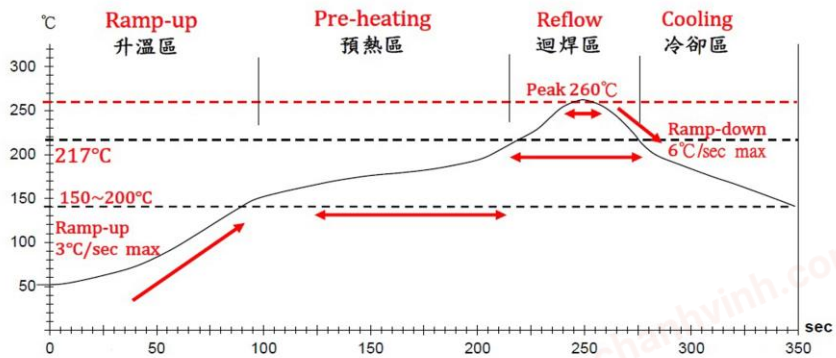
No	Item	Specification	Test Method
1-1-1	Flexure Strength	The forces applied on the right conditions must not damage the terminal electrode and the ferrite	Test device shall be soldered on the substrate Substrate Dimension: 100x40x1.6mm Deflection: 2.0mm Keeping Time: 30sec *For 100505, substrate dimension 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 More than 75% of the termina electrode should be covered with solder. Impedance : within ±30% of initial value	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
1-1-5	Terminal Strength Test	No split termination 	Test device shall be soldered on the substrate, then apply a force in the direction of the arrow. Force : 5N Keeping Time: 10±1sec

1-2.Environmental Performance

No	Item	Specification	Test Method
1-2-1	Temperature Cycle	Appearance: No damage Impedance: 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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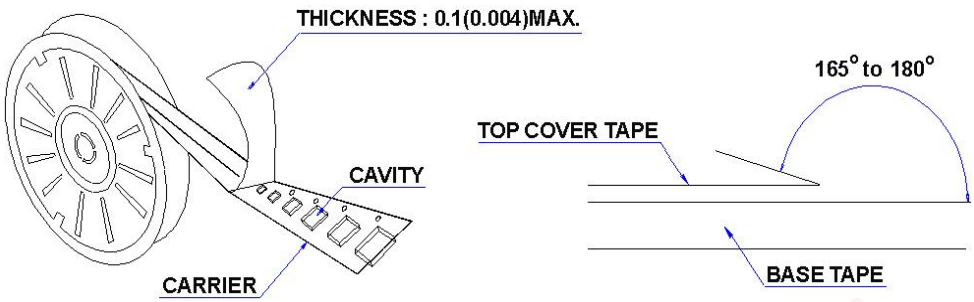
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11 Packaging:

11.1 Packaging -Cover Tape

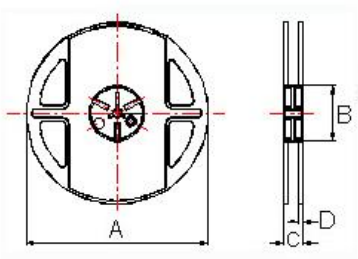
The force for tearing off cover tape is 10 to 100 grams in the arrow direction.



11.2 Packaging Quantity

TYPE	PCS/REEL
060303	15000
100505	10000
160808	4000
201209	4000

11.3 Reel Dimensions



Dimensions in mm

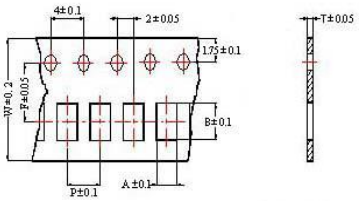
TYPE	A	B	C	D
060303	178	60	12	1.5
100505	178	60	12	1.5
160808	178	60	12	1.5
201209	178	60	12	1.5

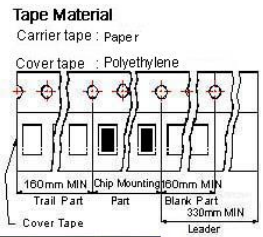
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11 Packaging:

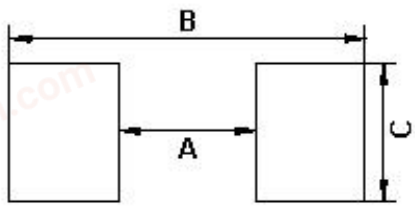
11.4 Tape Dimensions in mm





TYPE	A	B	T	W	P	F
060303	0.37	0.67	0.42	8	2	3.5
100505	0.62	1.12	0.60	8	2	3.5
160808	1.05	1.85	0.95	8	4	3.5
201209	1.50	2.30	0.97	8	4	3.5

12 Recommended Land Pattern:



Dimensions in mm

TYPE	A	B	C
201209	1.0 ~ 1.2	2.6 ~ 4.0	1.0 ~ 1.4

13 Note:

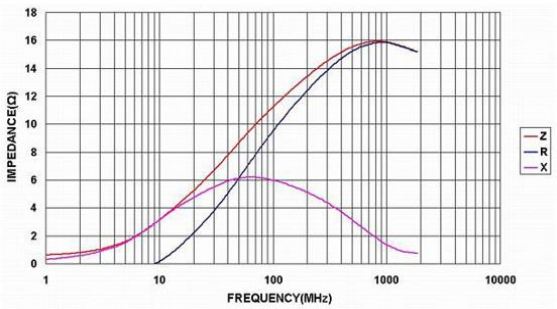
1. Please make sure that your product has been evaluated and confirmed against your specifications when our product is mounted to your product.
2. Do not knock nor drop.
3. All the items and parameters in this product specification have been prescribed on the premise that our product is used for the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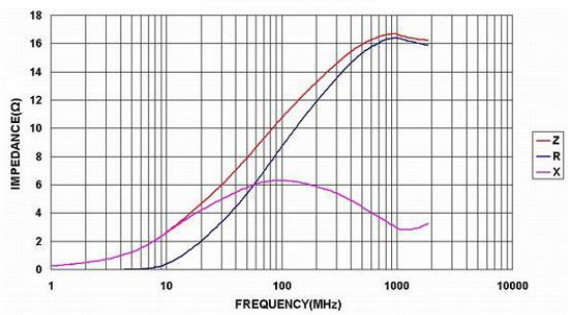
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14 Graph:

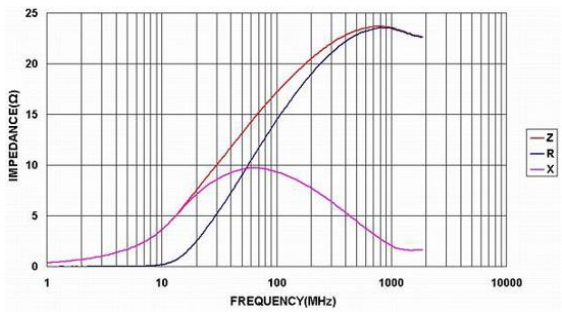
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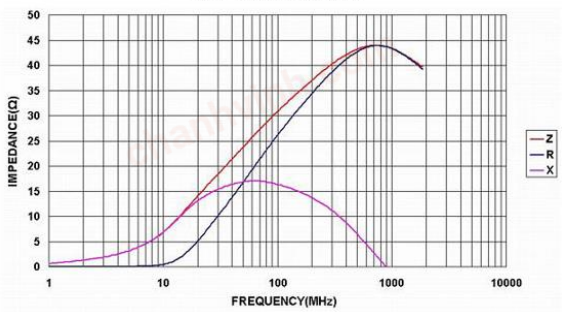
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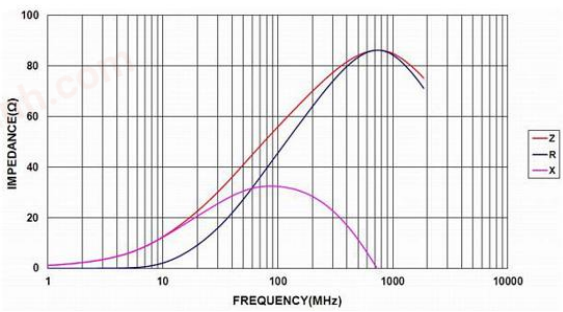
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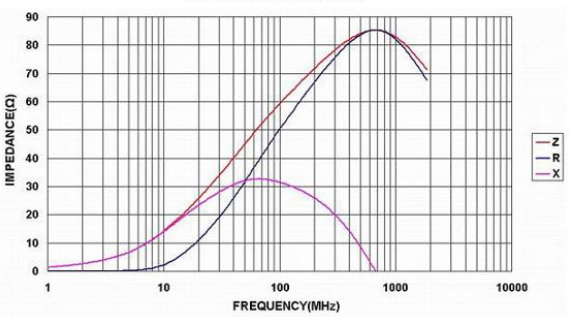
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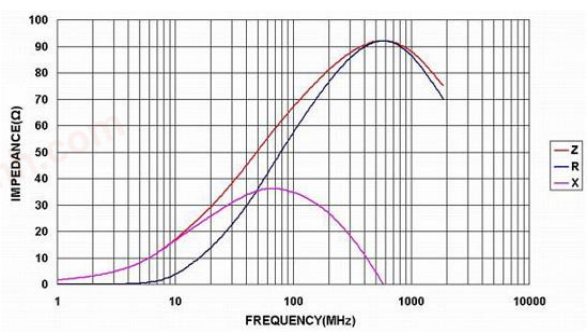
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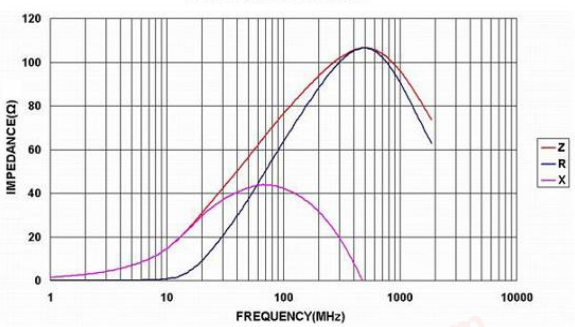
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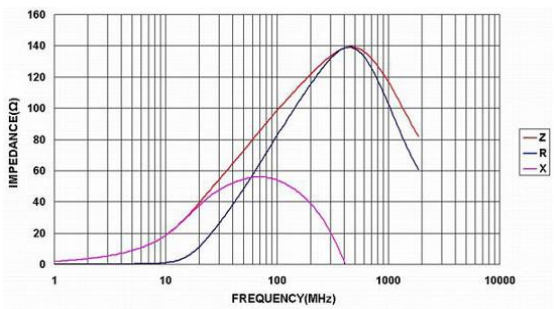


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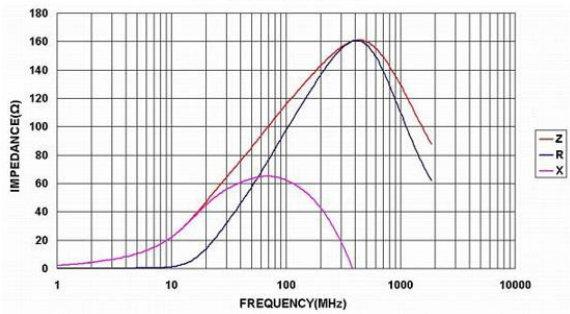
BBPY00201209 Series Specification

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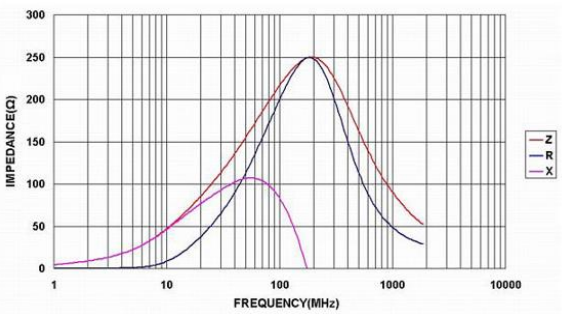
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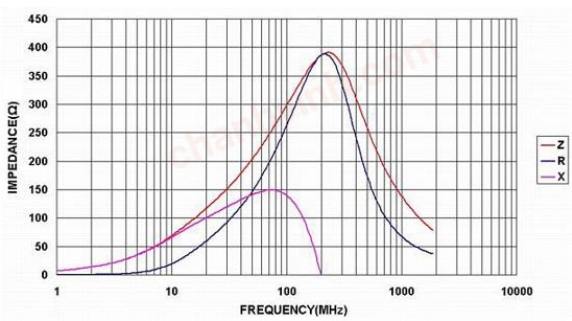
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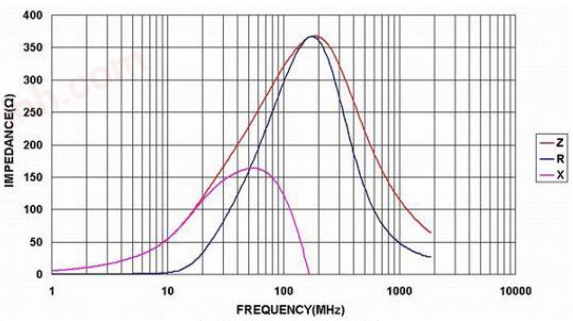
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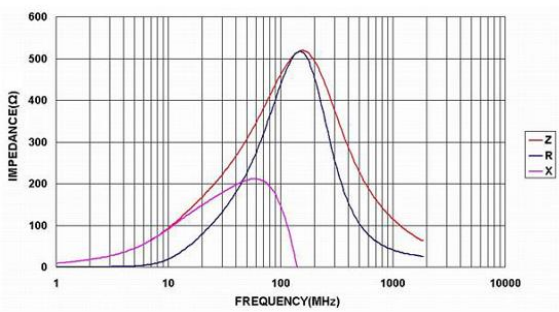
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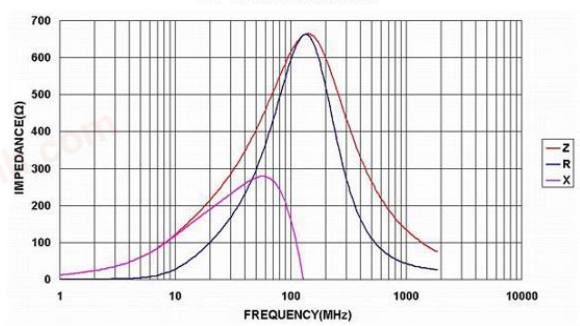
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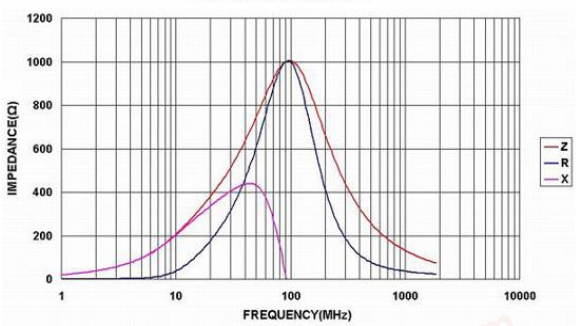
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14 Graph:

