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EMI Common Mode Choke

BPPM Series

Overview

An EMI common mode choke (CMC) for power lines is a passive component specifically designed to suppress electromagnetic interference (EMI) in power supply circuits
A full series of common mode choke is designed for excellent noise attenuation with compact sizing for use in wide range of applications. Both standard series and custom designs are available.

Benefits

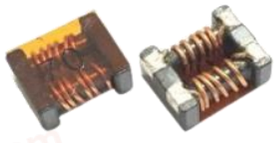
1. For DC Power Line Common Mode Filter
2. Miniature SMD type common mode filter for fully automated assembly
3. Wide impedance range (70Ω ~ 3000Ω) for EMI suppression
4. Operating temperature range－40°C～125°C
4. Excellent solderability

Applications

1. Networking
2. EMI solutions for charger
3. Media player, Dashboard

Product Information

Series	Size Code (JIS/EIA)	Impedance(Ω)
BPPM	5050/2020 7060/2824 9070/3628 1211/4844 1513/6052 4850/1920	70 ~ 3000





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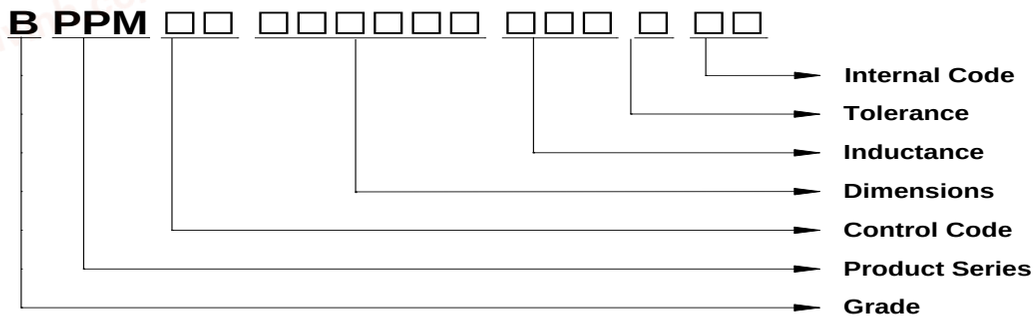
BPPM00121164 Series Specification

1 Scope:

This specification applies to the Pb Free high current type SMD inductors

2 Part Numbering:



3 Rating:

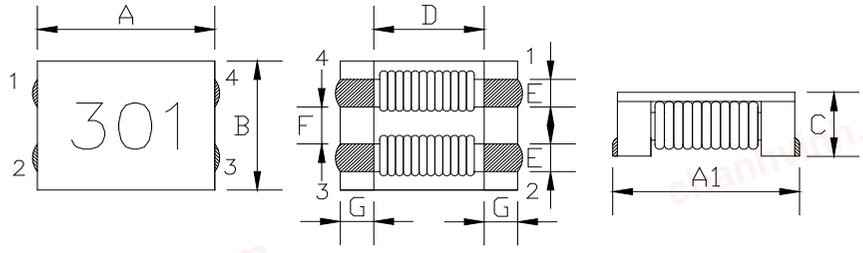
Operating Temperature: - 40℃ ~ 125℃(Including self - temperature rise)

Storage Temperature: (on tape & reel): -20°C to +40°C; 75% RH max.

4 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

5 Configuration and Dimensions and Unit Weight:



A:	12.0±0.5	mm
A1:	12.5±0.5	mm
B:	10.8±0.5	mm
C:	6.4 Max.	mm
D:	7.0 Typ.	mm
E:	2.7 Typ.	mm
F:	2.5 Typ.	mm
G:	2.5 Typ.	mm

Marking XXX

Marking color:Black

Net Weight (grms)

SIZE CODE	Net Weight (grms)
121164	2.68(Typ.)

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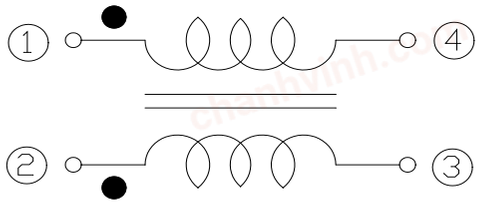
6 Electrical Characteristics:

PT/NO.	Impedance(Ω) at 100MHz		Test Frequency	Resistance RDC(Ω) Max.(1 line)	Rated Current (A) Max.	Insulation Resistance (MΩ) Min.	Rated Voltage (V)Max.
	Min.	Typ.					
BPPM00121164800X00	80	230	100MHz/0.5V	2.2m Typ.	10	10	125
BPPM00121164701X00	500	700	100MHz/0.5V	6.0m	8	10	125
BPPM00121164801X00	600	800	100MHz/0.5V	8.0m	8	10	125
BPPM00121164102X00	750	1000	100MHz/0.5V	14 m	6	10	125
BPPM00121164222X00	2200	2500	10MHz/0.5V	35 m	1.8	10	125
BPPM00121164272X00	2300	2700	10MHz/0.5V	50 m	1.5	10	125

CIRCUIT DIAGRAM



NOTE:

1.Rated DC Current： Based on temperature rise （△T：40℃ Typ.)

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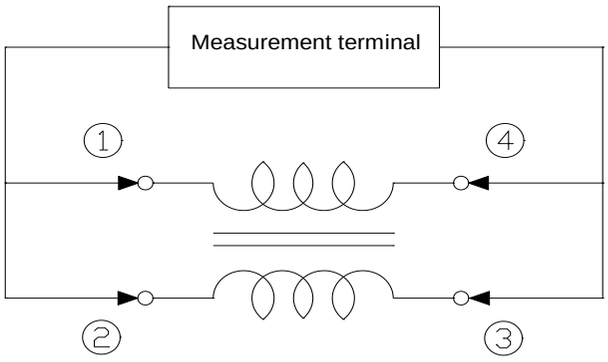
6 Electrical Characteristics:

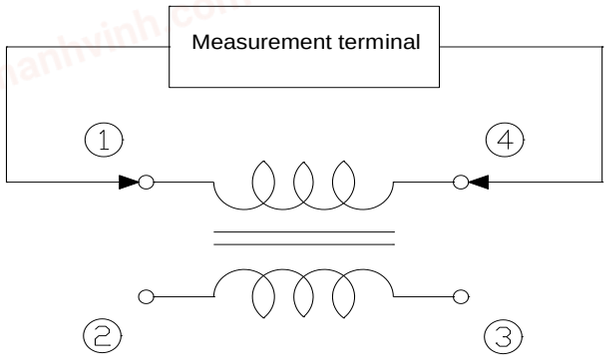
(6)-1 Impedance

Measured by HP4291B RF Impedance Analyzer.



(6)-2 DC Resistance

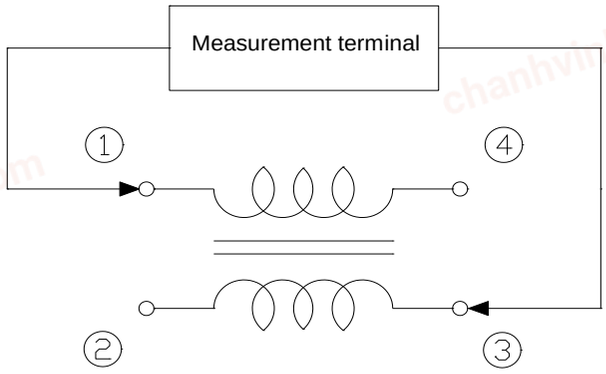
Measured by Chroma 16502 milliohm meter.



(6)-3 Insulation Resistance

Measured by Chroma 19073

Measurement voltage : 50V ,Measurement time : 3 sec.



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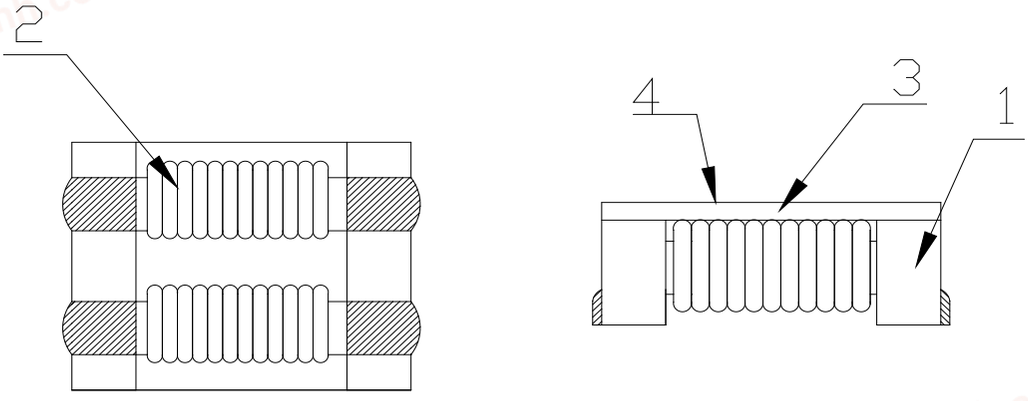
6 6.1 Construction:



6.2 Material List:

NO.	ITEM	DESCRIPTION & TYPE
1	CORE	FERRITE
2	Wire	Magnet Wire
3	Cover	Mayler
4	Marking	INK

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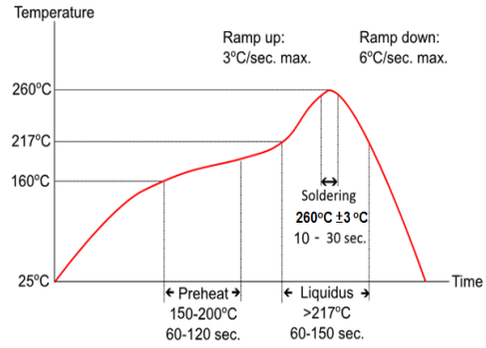
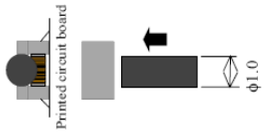
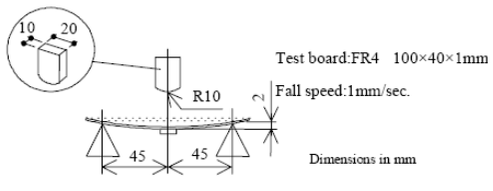
MECHANICAL

TEST ITEM	SPECIFICATION	TEST DETAILS
Solder ability	The product shall be connected to the test circuit board by the fillet (the height is 0.2mm).	Apply cream solder to the printed circuit board . Refer to clause 8 for Reflow profile.
Resistance to Soldering heat (reflow soldering)	There shall be no damage or problems.	Temperature profile of reflow soldering  Note: 1. Re-Flow Possible times:within 2 times 2. Nitrogen adopted is recommended while in re-flow
Terminal strength	The terminal electrode and the ferrite must not damaged.	Solder a chip to test substrate , and then laterally apply a load 9.8N in the arrow direction. 
Strength on PC board bending	The terminal electrode and the ferrite must not damaged.	Solder a chip to test substrate and then apply a load. 
High temperature resistance	Impedance:Within±20% of the initial value. Insulation resistance and DC resistance on the specification(refer to clause 2-1) shall be met. The terminal electrode and the ferrite must not damaged.	After the samples shall be soldered onto the test circuit board,the test shall be done. Measurement : After placing for 24 hours min. Temperature : +125±2℃ Applied voltage : Rated voltage Applied current : Rated current Testing time : 500±12 hours

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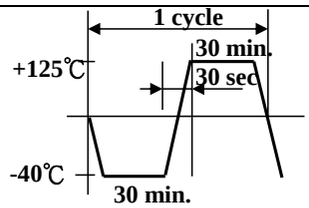
MECHANICAL

TEST ITEM	SPECIFICATION	TEST DETAILS
Humidity resistance	Impedance:Within±20% of the initial value. Insulation resistance and DC resistance on the specification(refer to clause 2-1) shall be met. The terminal electrode and the ferrite must not damaged.	After the samples shall be soldered onto the test circuit board,the test shall be done. Measurement : After placing for 24 hours min. Temperature : +60±2℃ , Humidity : 90 to 95 %RH Applied voltage : Rated voltage Applied current : Rated current Testing time : 500±12 hours
Thermal shock	Impedance:Within±20% of the initial value. Insulation resistance and DC resistance on the specification(refer to clause 2-1) shall be met. The terminal electrode and the ferrite must not damaged.	 Testing Time:100 cycle
Low temperature storage	Impedance:Within±20% of the initial value. Insulation resistance and DC resistance on the specification(refer to clause 2-1) shall be met. The terminal electrode and the ferrite must not damaged.	After the samples shall be soldered onto the test circuit board,the test shall be done. Measurement : After placing for 24 hours min. Temperature : -40±2℃ Testing time : 500±12 hours
Vibration	Impedance:Within±20% of the initial value. Insulation resistance and DC resistance on the specification(refer to clause 2-1) shall be met. The terminal electrode and the ferrite must not damaged.	After the samples shall be soldered onto the test circuit board,the test shall be done. Frequency : 10 to 55 Hz Amplitude : 1.52 mm Dimension and times : X ,Y and Z directions for 2 hours each.
Solderability	New solder More than 75%	Flux (rosin, isopropyl alcohol{JIS-K-1522}) shall be coated over the whole of the sample before hard, the sample shall then be preheated for about 2 minutes in a temperature of 130～150℃ and after it has been immersed to a depth 0.5mm below for 3±0.2 seconds fully in molten solder M705 with a temperature of 245±2℃. More than 75% of the electrode sections shall be couered with new solder smoothly when the sample is taken out of the solder bath.

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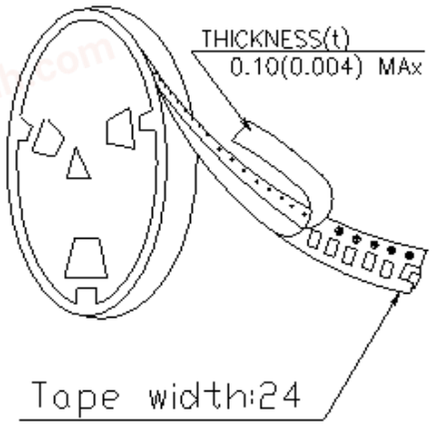
7 Packaging:

7.1 Packaging -Cover Tape

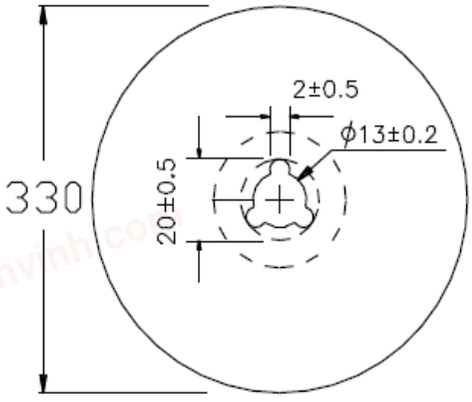


7.2 Packaging Quantity

TYPE	PCS/REEL
BPPM00121164	500

7.3 Reel Dimensions

Unit : mm



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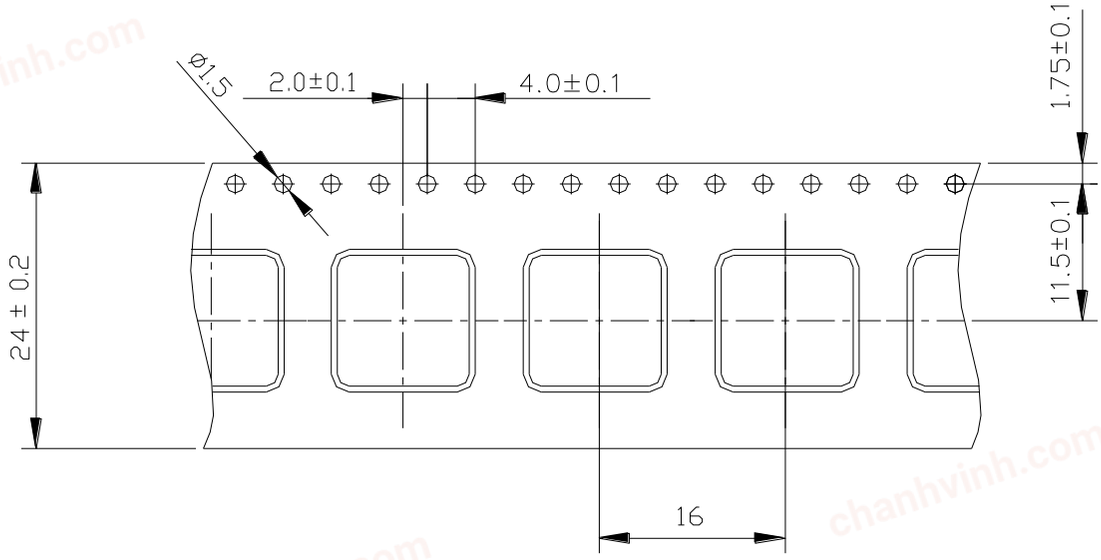
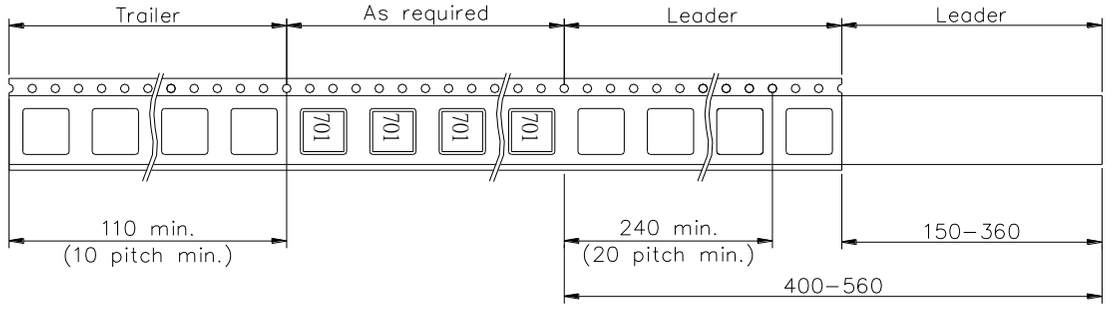
7 Packaging:

7.4 Tape Dimensions in mm

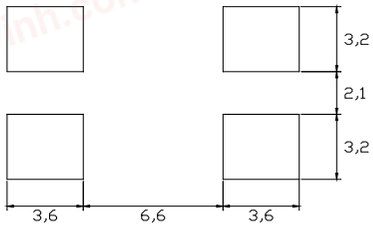


Unreeling Direction



8 Recommended Land Pattern:

(STANDARD PATTERN) **Unit : mm**



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9 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 or 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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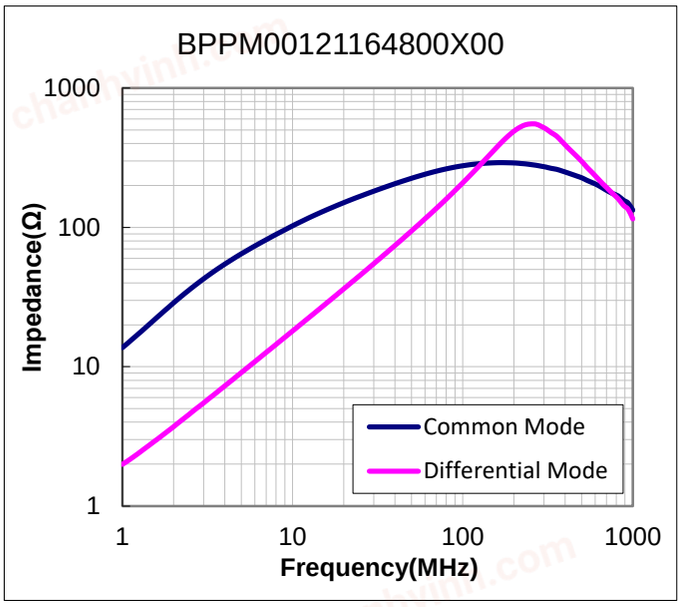
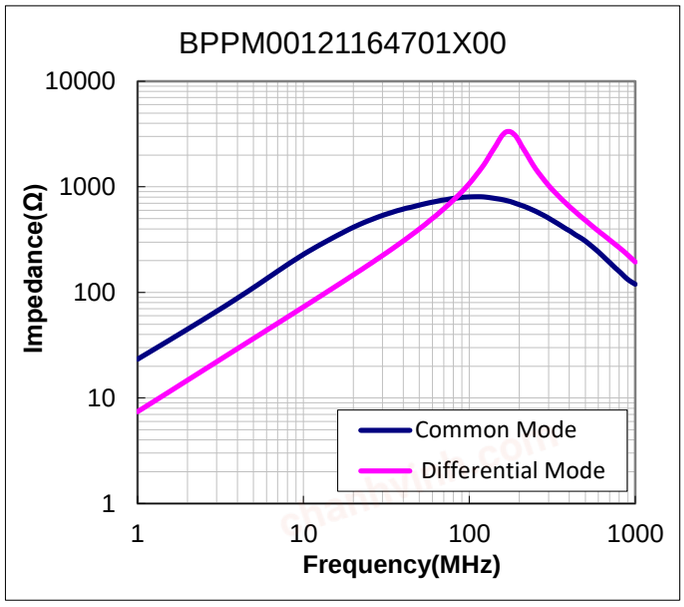
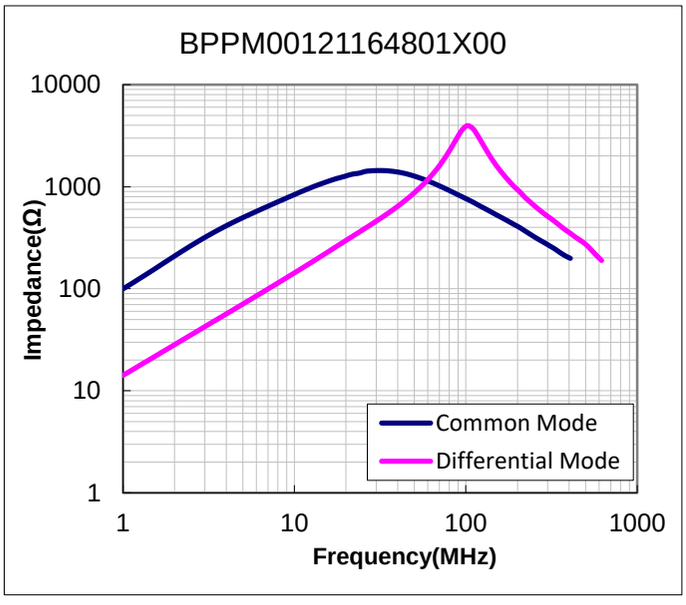
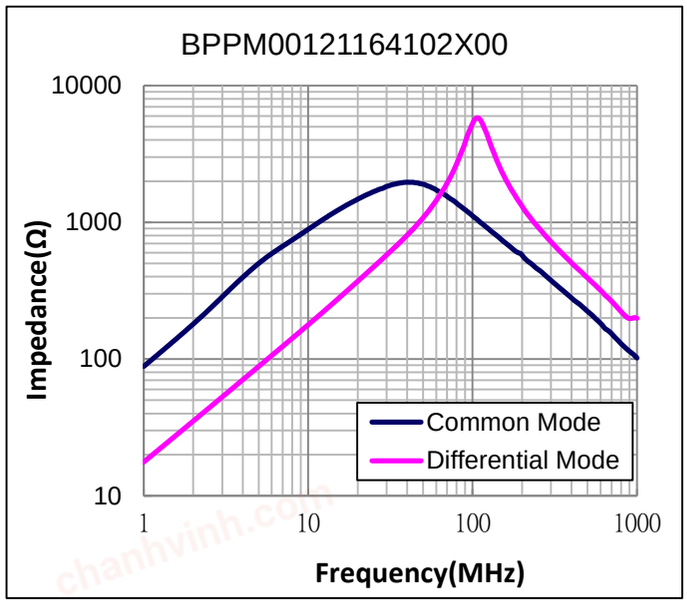
TYPICAL ELECTRICAL CHARACTERISTICS

Frequency vs impedance









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TYPICAL ELECTRICAL CHARACTERISTICS

Frequency vs impedance

