

EMI Common Mode Choke



BPPI 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

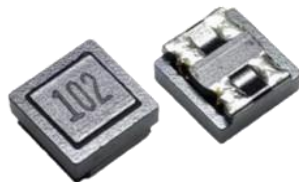
1. For Power line noise countermeasure
2. Miniature SMD type common mode filter for fully automated assembly
3. Excellent solderability

Applications

1. Networking
2. EMI solutions for charger

Product Information

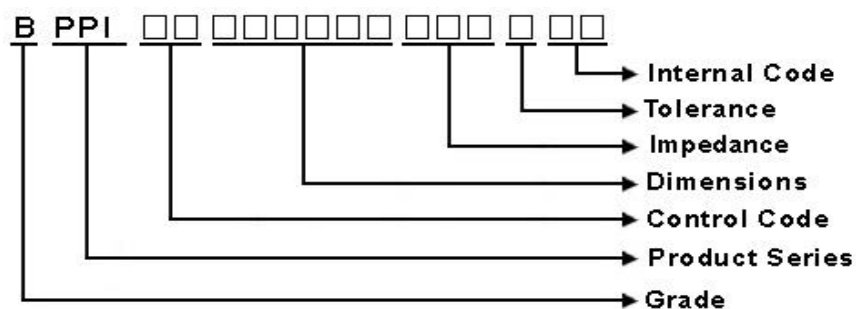
Series	Size Code (JIS/EIA)	Impedance(Ω)
BPPI	4850/1920	100 ~ 3000



BPPI00050525 Series Specification

1 Scope: This specification applies to the Pb Free Common mode filters

2 Part Numbering:



3 Rating:

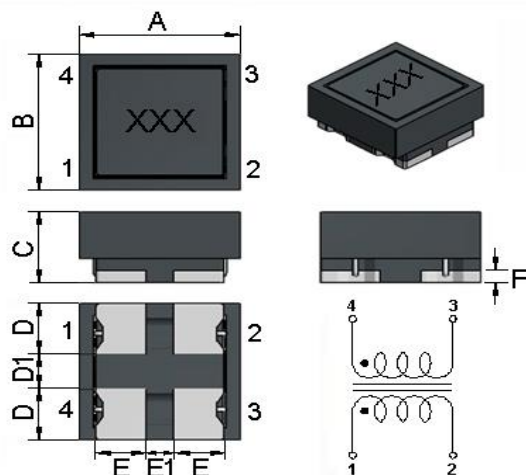
Operating Temperature: - 40°C ~ + 125°C (Including self temp. rise)

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°C)	20 to 30°C
Humidity	Ordinary Humidity(25 to 85% RH)	50 to 80 %RH

5 Configuration and Dimensions and Unit Weight:



Ex Marking:102
Marking Color: Black

A: 4.8±0.20	mm
B: 5.0±0.20	mm
C: 2.5 Max.	mm
D: 1.90 Typ.	mm
D1: 1.20 Typ.	mm
E: 1.35 Typ.	mm
E1: 0.80 Typ.	mm
F: 0.45 Typ.	mm

Net Weight (grms)

SIZE CODE	Net Weight (grms)
050525	0.213(typ.)

BPPI00050525 Series Specification

6 Electrical Characteristics:

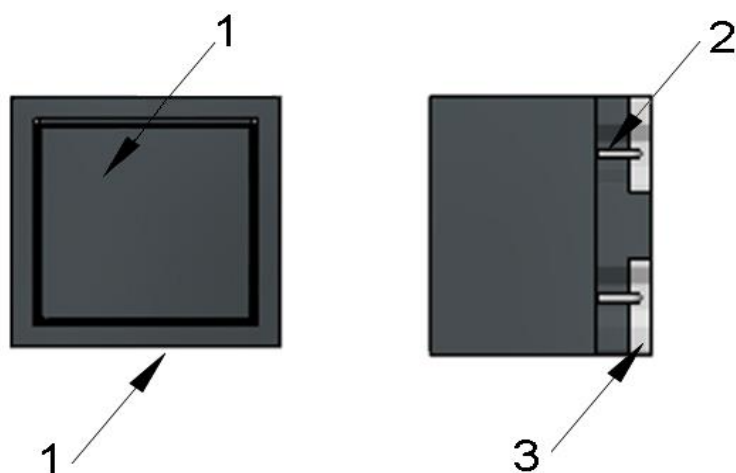
Part No.	Impedance(Ω) Min. @10MHz,0.5V	Impedance(Ω) Typ. @100MHz,0.5V	RDC (mΩ)	I _{rms} (A)Max.	Rated Voltage (V)Max.	Withstanding voltage (V)Max.	Insulation Resistance (MΩ)Min.	Marking
BPPI00050525101X00	10	100	9±40%	6.0	50	125	10	101
BPPI00050525251X00	20	250	14±40%	5.0	50	125	10	251
BPPI00050525501X00	30	500	19.0Max.	4.0	50	125	10	501
BPPI00050525102X00	60	1000	24±40%	2.0	50	125	10	102
BPPI00050525142X00	100	1400	40±40%	1.5	50	125	10	142
BPPI00050525152X00	—	1500	40±40%	1.5	50	125	10	152

NOTE:

1.I_{rms} : Based on temperature rise (ΔT : 40℃ Typ.)

BPPI00050525 Series Specification

7.1 Construction:



7.2 Material List:

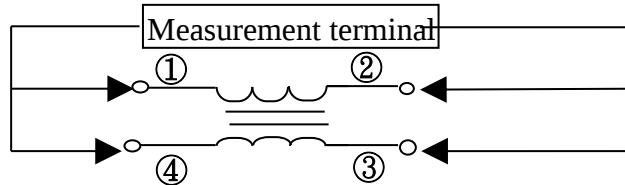
NO	Part	Material
1	Core	Ferrite
2	Wire	Magnet Wire
3	Terminal	Ag/Ni/Sn

BPPI00050525 Series Specification

TEST EQUIPMENT

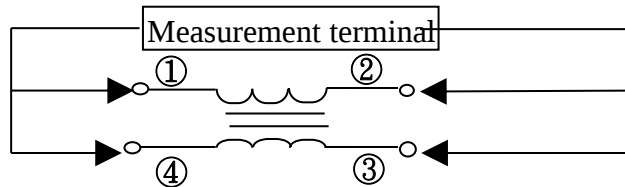
1. Impedance

Measured by using HP4291B RF Impedance Analyzer.



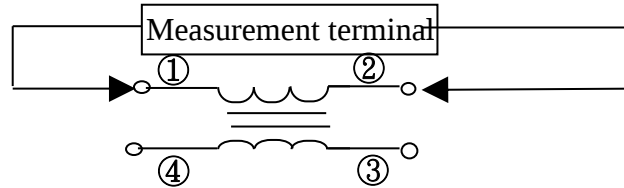
2. Inductance

Measured by using HP4284A PRECISION LCR METER.



3. DC Resistance

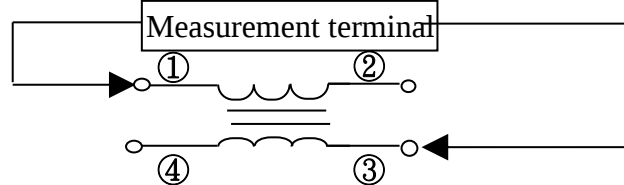
Measured by using Chroma 16502 milliohm meter.



4. Insulation Resistance

Measured by using Chroma 19073

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



BPPI00050525 Series Specification

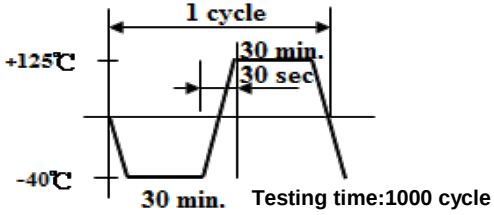
BPPI00050525 Series Specification

MECHANICAL

TEST ITEM	SPECIFICATIONS	TEST CONDITIONS
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 be 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 be damaged.	Test device shall be soldered on the substrate Substrate Dimension: 100x40x1.6mm Deflection: 2.0mm Keeping Time: 60 sec
High temperature resistance	Impedance: Within $\pm 20\%$ 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 be 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 : $+125 \pm 2^\circ\text{C}$ Applied voltage : Rated voltage Applied current : Rated current Testing time : 500 ± 12 hours

BPPI00050525 Series Specification

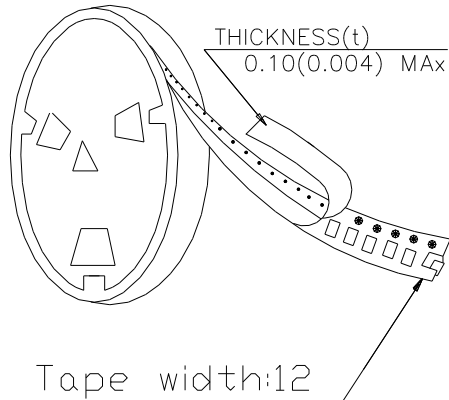
ENVIRONMENT CHARACTERISTICS

TEST ITEM	SPECIFICATIONS	TEST CONDITIONS
Humidity resistance	Impedance: Within $\pm 20\%$ 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 be 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 : $+85 \pm 2^\circ\text{C}$, Humidity : 85 %RH Applied voltage : Rated voltage Applied current : Rated current Testing time : 500 ± 12 hours
Thermal shock	Impedance: Within $\pm 20\%$ 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 be damaged.	 Testing time: 1000 cycle
Low temperature storage	Impedance: Within $\pm 20\%$ 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 be 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 : $-40 \pm 2^\circ\text{C}$ Testing time : 500 ± 12 hours
Vibration	Impedance: Within $\pm 20\%$ 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 be 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	The electrodes shall be at least 90% covered with new solder coating.	Flux (rosin, isopropyl alcohol {JIS-K-1522}) shall be coated over the whole of the sample before hand, the sample shall then be preheated for about 2 minutes in a temperature of $130 \sim 150^\circ\text{C}$ 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 $245 \pm 5^\circ\text{C}$. More than 90% of the electrode sections shall be covered with new solder smoothly when the sample is taken out of the solder bath.

BPPI00050525 Series Specification

8 Packaging:

8.1 Packaging -Cover Tape

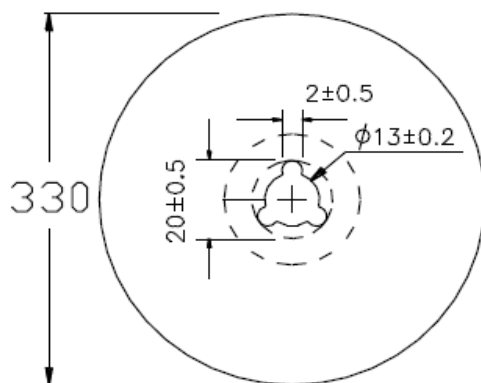


8.2 Packaging Quantity

TYPE	PCS/REEL
050525	2500

8.3 Reel Dimensions

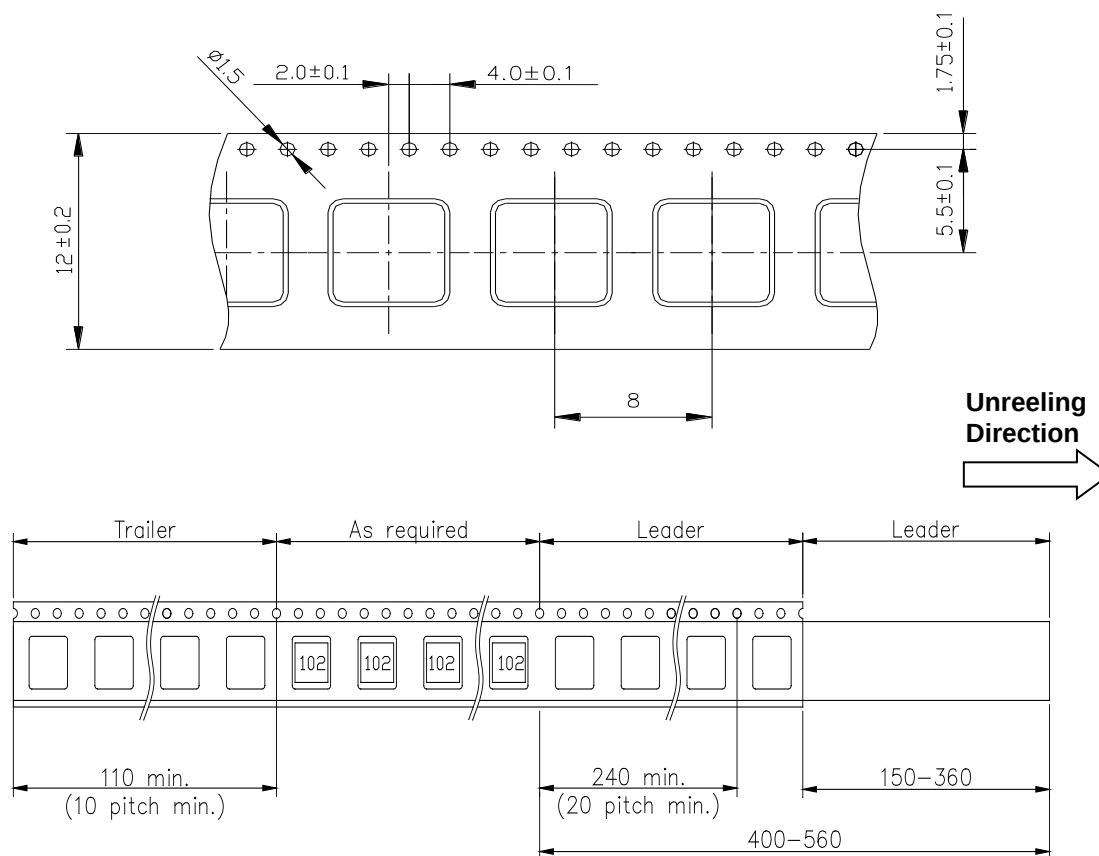
Unit : mm



BPPI00050525 Series Specification

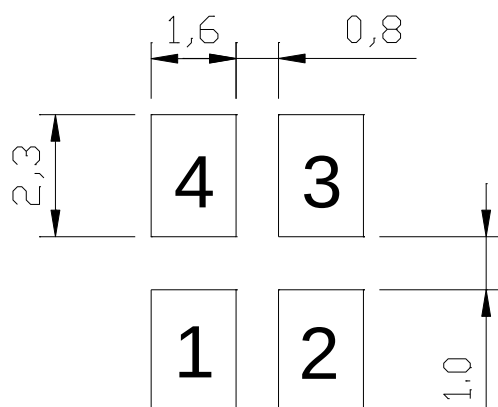
8 Packaging:

8.4 Tape Dimensions in mm



9 Recommended Land Pattern:

(STANDARD PATTERN) Unit : mm



BPPI00050525 Series Specification

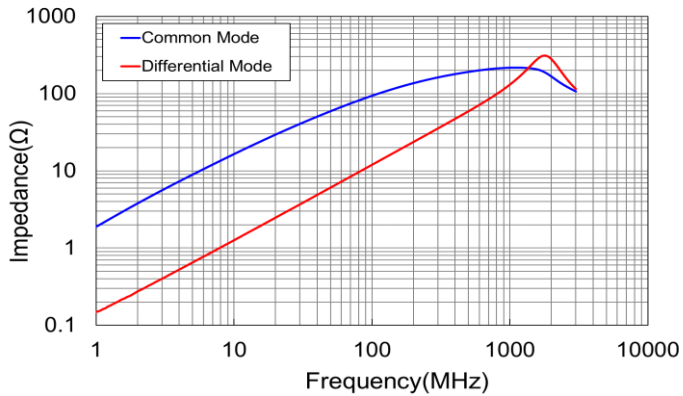
10 Note:

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.

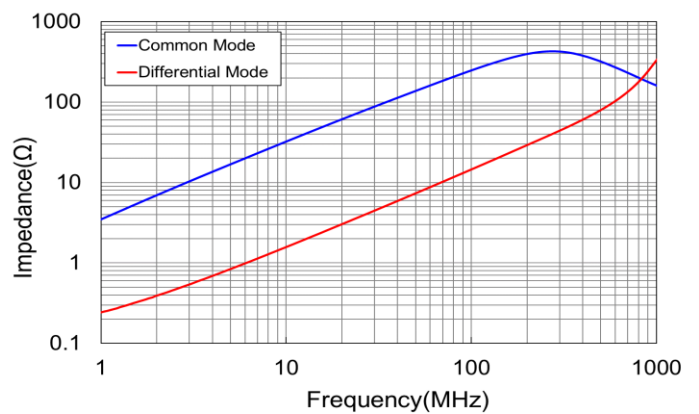
BPPI00050525 Series Specification

Graph:

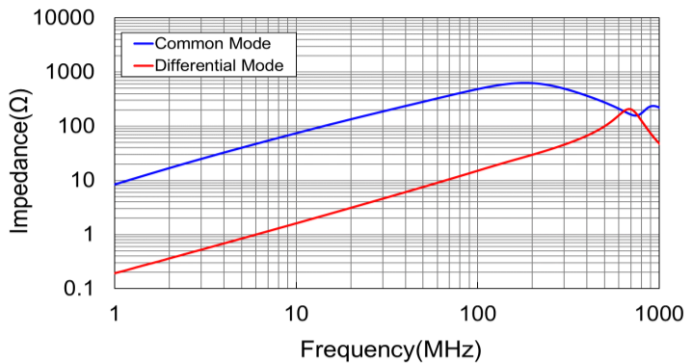
BPPI00050525101X00



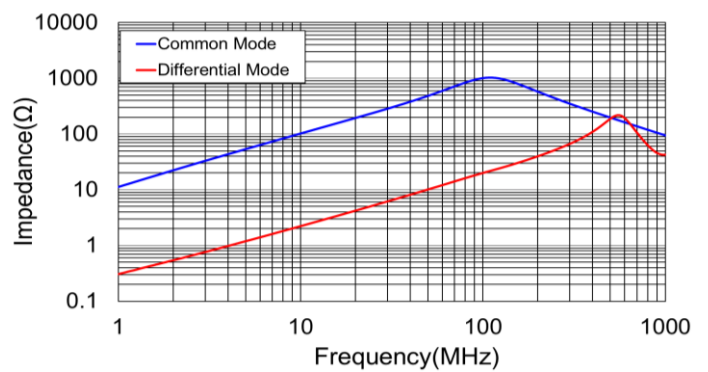
BPPI00050525251X00



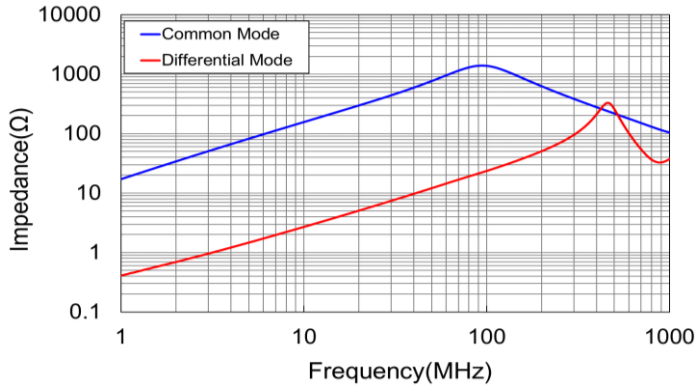
BPPI00050525501X00



BPPI00050525102X00



BPPI00050525142X00



BPPI00050525152X00

