

Suppression

Order code	Manufacturer code	Description
26-6010	BNX002-01	BNX002-01 DC POWER FILTER
26-6015	n/a	BNX005-01 DC POWER FILTER
26-6020	BNP002-02	BNP002-02 PI TYPE FILTER
26-6025	BNP002-03	BNP002-03 PI TYPE FILTER

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The enclosed information is believed to be correct, Information may change 'without notice' due to product improvement. Users should ensure that the product is suitable for their use. E. & O. E.	Revision A 04/07/2003

EMI SUPPRESSION FILTER

Block Type EMIFIL[®] BNP/BNX Series

**Completely eliminates noise in a wide range of complex circuits from 0.5MHz to 1GHz.
Mountable on any type of P.C. board.**

Murata's new block type EMIFIL[®] BNP/BNX series completely eliminate noise from extremely wide frequency bands. The BNX is perfect for use in DC power circuits, while the BNP is ideal for eliminating noise in logic signal circuits. Both are designed to perform superbly the result of Murata's wide expertise in the fields of through-type barrier layer capacitors, monolithic chip capacitors and

bead inductors.

Each block contains a number of compact EMI suppression filters. In addition, the input/output terminals and the grounding terminal are aligned in the same direction, thus permitting fast and easy assembly on any type of P.C. board.

BNP

[for signal circuit]



BNX

[for DC power supply]



■FEATURES

1. The EMIFIL[®] BNP002 incorporates through-type barrier layer capacitors and π circuits, allowing it to obtain significantly large insertion losses throughout an extremely wide frequency range—from 15MHz up to 1GHz.
2. The cut-off frequency is designed to be at several MHz, which is ideal for eliminating noise from any circuit in which the signal frequency and the noise frequency are relatively close together.
3. Since all noise in plural signal lines can be eliminated by one filter block, the filter is extremely compact.
4. There are no connection routes in the current circuits, thus ensuring highly reliable performance.
5. Both the input/output terminals and the grounding terminal are aligned in the same direction, permitting fast and easy installation on any type of P.C. board.

■APPLICATIONS

Noise elimination from signal lines and DC power sources in engine control units, digital equipment and computer terminals.

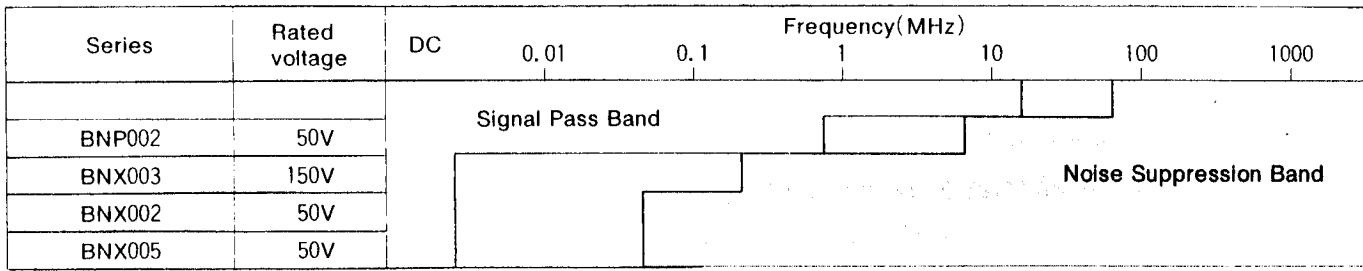
■FEATURES

1. The EMIFIL[®] BNX002 incorporates a through-type barrier layer capacitor and a four-terminal capacitor which are interconnected. This combination enables the BNX002 to achieve a significantly large insertion loss throughout the extremely wide frequency range of 0.5MHz to 1GHz, which covers the AM and UHF-TV broadcast frequency bands.
2. The filter is extremely compact since only one filter block is needed to completely eliminate noise from both the positive and negative lines.
3. There are no connection routes in the current circuits, thus ensuring highly reliable performance.
4. Both the input/output terminals and the grounding terminal are aligned in the same direction, permitting fast and easy installation on any type of P.C. board.
5. BNX003-01 features high dielectric constant, that is the rated voltage 150V.

■APPLICATIONS

Noise elimination from DC power sources in a variety of switching power sources, engine control units, digital equipment and computer terminals.

■ EFFECTIVE FREQUENCY RANGE OF BNP/BNX SERIES (IN CASE OF LINE IMPEDANCE 50Ω)



Method of using the BNP and BNX filter blocks, and applications.

■ USING EMIFIL[®] EFFECTIVELY

The block type EMIFIL[®] effectively prevents unwanted reflections and external noise from entering the equipment circuitry and power lines by grounding all the high frequency components which make up the noise. Therefore, if grounding is improperly done, the filters may be unable to achieve the performance they are capable of. To prevent this, be sure to observe the following instructions.

1. When designing the P.C. board, use all the available grounding terminals, and arrange the grounding circuit so that the area of the foil for the grounding circuit is maximized.
2. Minimize the distance between the P.C. board ground and the filter's grounding plate.
Use of through-hole P.C. boards.
3. Whichever P.C. board is used, push the filter onto the P.C. board up to the terminal roots.
4. Do not connect PSG to CG by any other means except through the filter.

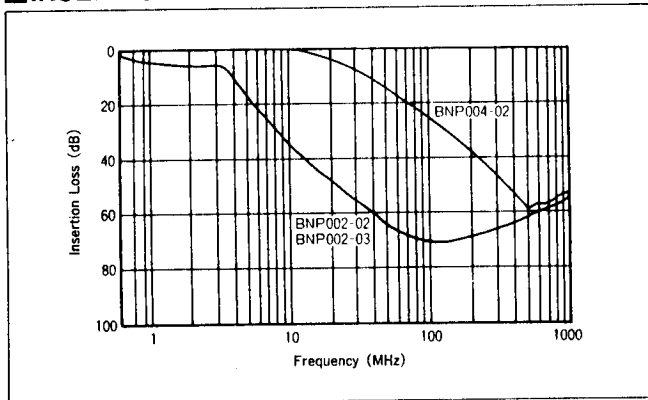
The BNP Series

π Type Noise Suppression Filters

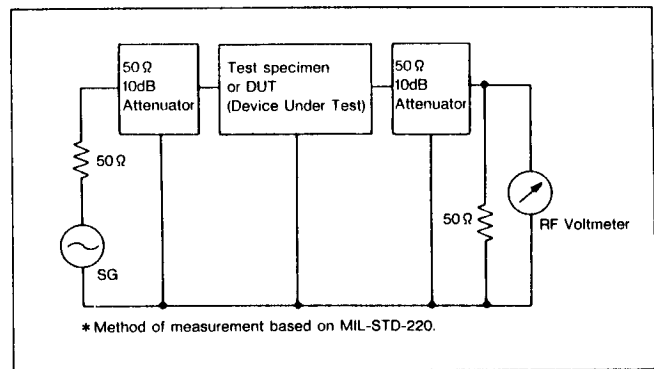
SPECIFICATIONS

Item	Specifications	
Part Number	BNP002-02	BNP002-03
Number of Circuits	2	3
Circuit Construction	π	
Operating Temp. Range	-40 to +100°C	
Rated Voltage	50VDC	
Withstand Voltage	300VDC	
Rated Current	10ADC	
Insulation Resistance	1000M Ω min.	
DC Resistance	0.05 Ω max. (20 to 25°C)	
Insertion Loss	20MHz~500MHz:40dB min. (20 to 25°C)	

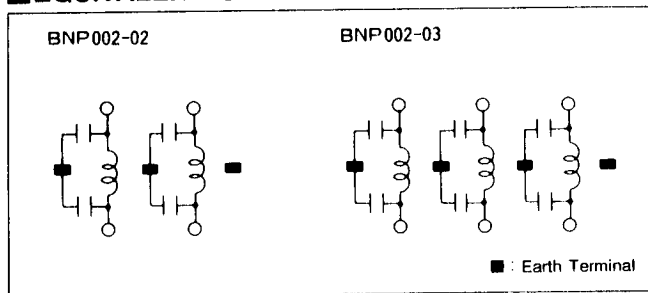
INSERTION LOSS CHARACTERISTICS



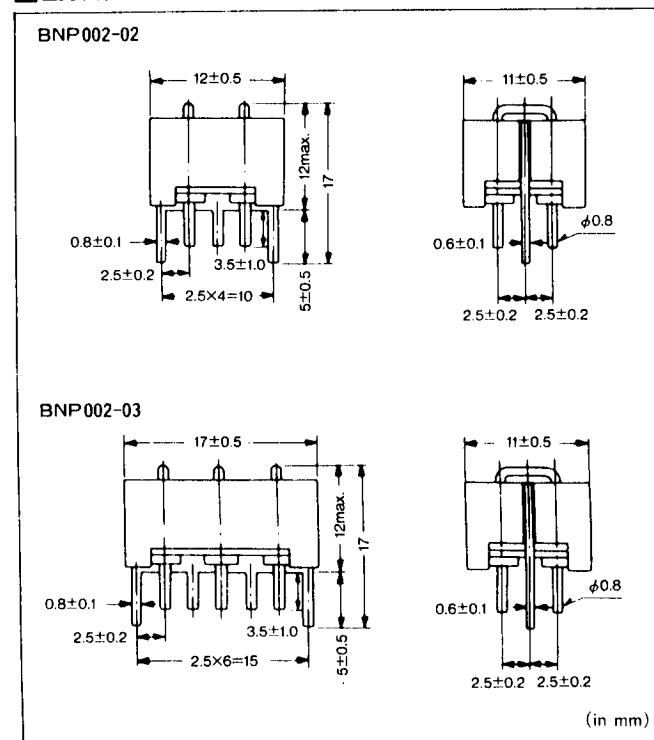
INSERTION LOSS MEASURING CIRCUIT



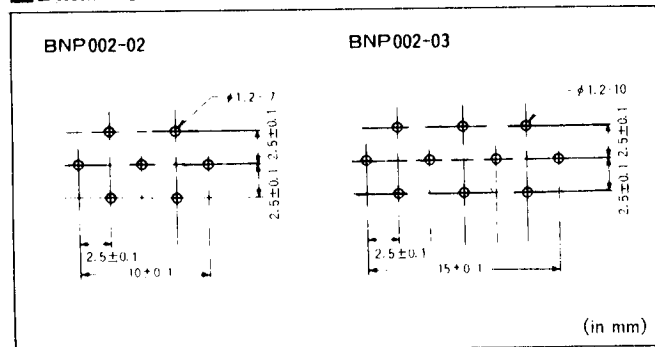
EQUIVALENT CIRCUIT



EXTERNAL DIMENSIONS



DIMENSIONS OF INSTALLATION HOLES



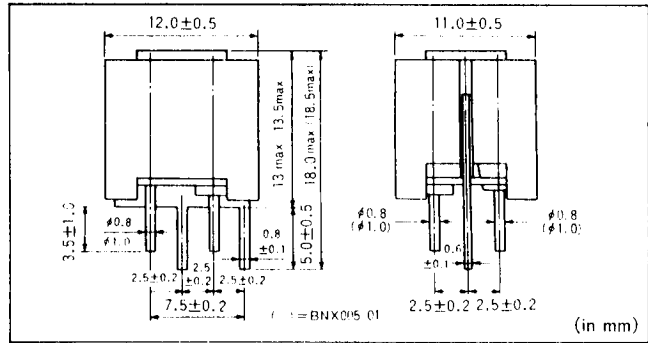
Wide frequency band noise suppression filter for use in DC power lines

The BNX Series

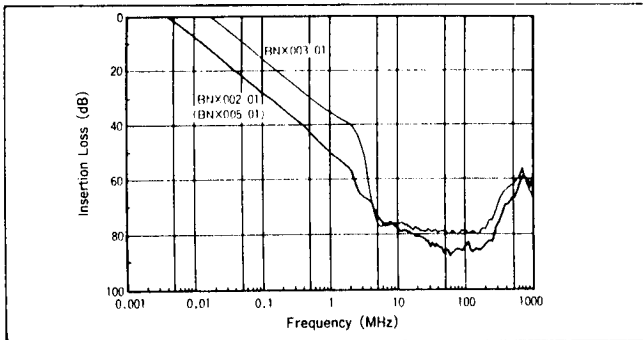
■ SPECIFICATIONS

Item	Specifications		
Part Number	BNX002-01	BNX003-01	BNX005-01
Operating Temp. Range	- 30 to +85°C		
Rated Volt.	50V DC	150V DC	50V DC
Withstand Volt.	125V DC	375V DC	125V DC
Rated Current	10A DC		15A DC
Insulation Resistance	100M Ω min.		
Insertion Loss	1MHz~1GHz 40dBmin.	5MHz~1GHz 40dBmin.	1MHz~1GHz 40dBmin.
	20 to 25°C (line impedance = 50 Ω)		

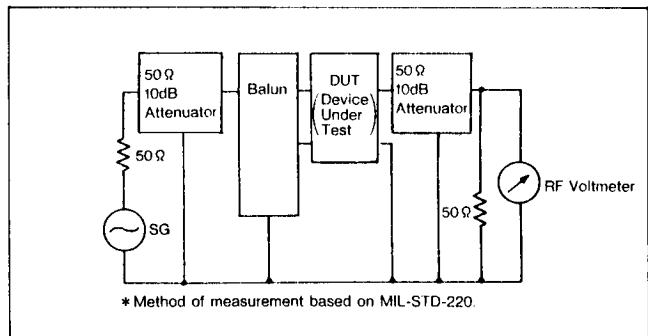
■ EXTERNAL DIMENSIONS



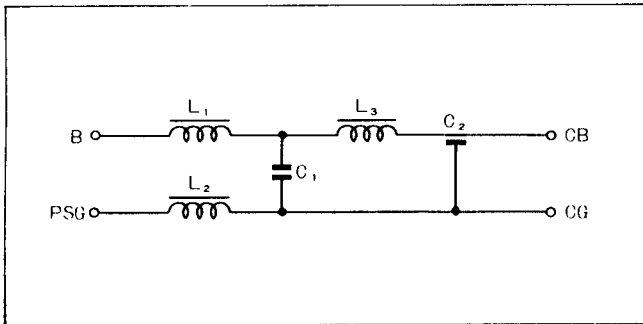
■ INSERTION LOSS CHARACTERISTICS



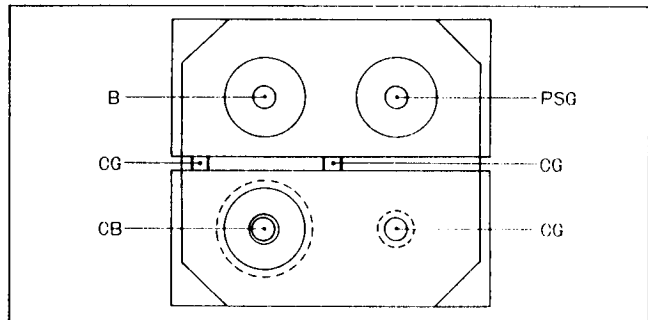
■ INSERTION LOSS MEASURING CIRCUIT



■ EQUIVALENT CIRCUIT

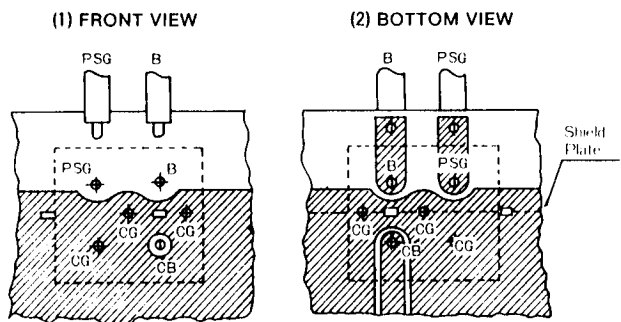


■ TERMINAL LAYOUT (BOTTOM FIGURE)



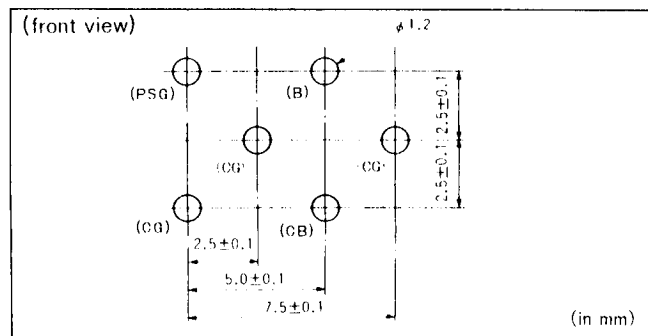
■ P.C. BOARD PATTERNS

Use a bilateral P.C. board. Insert the BNX into the P.C. board until the root of the terminal is secured, then solder.



PSG : Power supply ground
C G : Circuit ground
C B : Circuit + B

■ DIMENSIONS OF INSTALLATION HOLES



■ APPLICATION CIRCUIT OF BNX SERIES

