Reference Only

Block Type EMIFIL BNP Series Specification

1. Scope

This specification applies to Block Type EMIFIL.

2. Rating

Customer Part Number	Murata Part Number	Rated Voltage	Dielectric Strength	Rated Current	Insulation Resistance	DC Resistance	Insersion Loss
	BNP002-02		000 \ ((D0)				40dB min
	BNP002-03	50 V (DC)	300 V(DC)	300 V(DC)	10 A 1000MΩ min.	0.05 Ω max.	at 20 to 500MHz
	BNP004-02			()			40dB min at 300 to 1000MHz

[·] Operating Temperature : - 40 °C to + 100 °C

3. Standard Testing Condition

<Unless otherwise specified>

Temperature: Ordinary Temp. 15 °C to 35 °C

Humidity: Ordinary Humidity 25 %(RH) to 85 %(RH)

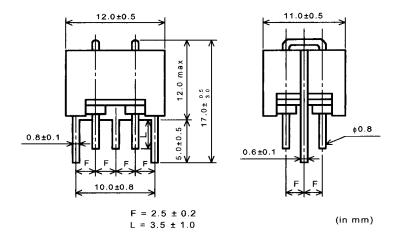
<In case of doubt>

Temperature : 20 °C ± 2 °C Humidity : 60 %(RH) to 70 %(RH)

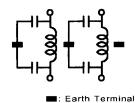
Atmospheric pressure: 86 kPa to 106 kPa

4. Style and Dimensions

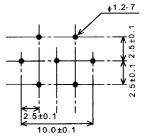
BNP002-02/BNP004-02 TYPE



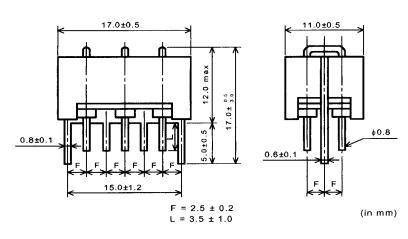
• EQUIVALENT CIRCUIT



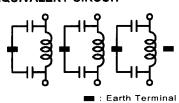
• DIMENSIONS OF MOUNTING HOLES



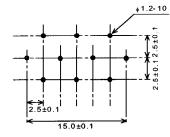
BNP002-03 TYPE



• EQUIVALENT CIRCUIT



• DIMENSIONS OF MOUNTING HOLES

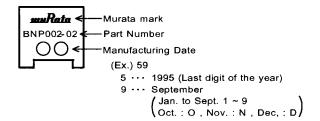


[·] Storage Temperature : - 40 °C to + 100 °C

Reference Only

5. Marking

Filter shall be marked as follows.



6. Electrical Performance

No.	Item	Specification	Test Method
6.1	Insulation Resistance	Meet item 2.	Measured at DC rated voltage. Time: 1 minute
6.2	Dielectric Strength	Filter shall be no failure.	Suitable resistor : 1MΩ. Test voltage specified in Rating (item 2) shall be applied between terminals. Time : 1 to 5 seconds. Charging current : 10 mA max.
6.3	DC Resistance	Meet item 2.	DC Resistance shall be measured between terminals.
6.4	Insertion Loss		$\begin{array}{c} 50\Omega \\ 10\text{dB} \\ 10\text{dB} \\ \text{Attenuator} \end{array}$ $\begin{array}{c} 50\Omega \\ 10\text{dB} \\ \text{Attenuator} \end{array}$ $\begin{array}{c} 50\Omega \\ 10\text{dB} \\ \text{Attenuator} \end{array}$ $\begin{array}{c} 50\Omega \\ \text{SG} \end{array}$ $\begin{array}{c} 50\Omega \\ \text{Method of measurement based on MIL-STD-220} \end{array}$ $\begin{array}{c} \text{Insertion Loss} = 20 \log (E_0 / E_1) \\ E_0 : \text{Level without FILTER (short)} \\ E_1 : \text{Level with FILTER} \end{array}$

7. Mechanical Performance

No.	Item	Specification		Test Method	
7.1	Appearance and Dimensions	Meet item 4.		Visual Inspection and measured with Slide Calipers.	
7.2	Marking	Marking is able to be read easily.		It is inspected Visually.	
7.3	Vibration	Meet Table 1.		It shall be soldered on the substrate.	
		Table 1		Acceleration: 66.7 m / s ²	
			No damaged.	Range of Vibration Frequency : 66.7Hz or 33.3Hz	
		Insulation Resistance	1000 M Ω min.	Double Amplitude: 0.8 mm (in case of 66.7Hz) 3.0 mm (in case of 33.3Hz)	
		Dielectric Strength	No failure.	Testing Time : Up and Down 4 hours Right and Left 2 hours	
		Insertion Loss	Meet item 2.	Before and Behind 2 hours	
7.4	Solderability	The lead is covered with a continuous new solder coating at least 75% along the circumference of the immersed part.		Flux: Ethanol solution of rosin, 25(wt)% Solder Temperature: 230 ± 5 °C Immersion Time: 2 ± 0.5 seconds 1.6±0.8mm Molten Solder (JIS Z 3282 H60A)	

No.	Item	Spe	cification	Test Method
7.5	Resistance to soldering heat	Meet Table 2. Table 2		Immersion Depth : 2 to 2.5 mm form the bottom of the body Flux : Ethanol solution of rosin, 25(wt)%
		Appearance Dielectric Strength	No damaged. No failure.	Solder Temperature : 350 ± 10 °C Immersion Time : 3 ± ½ seconds Then measured after exposure in the room
		Insertion Loss	Meet item 2.	condition for 2 to 24 hours.

8. Environmental Performance

No.	Item	Specification			Test Method	
8.1	Temperature Cycle	Meet Table 3. Table 3			1 Cycle 1 step: -40 °C± $^{\circ}_{3}$ °C / 30 minutes 2 step: Room Temperature / 5 within.	
		I.R. Dielectric Strength Insertion Loss	No dar BNP002 Type BNP004 Type No fa	800 MΩ min. 500 MΩ min.	3 step: +125 °C± $_0^3$ °C / 30 minutes 4 step: Room Temperature / 5 within. Total of 10 cycle Then measured after exposure in the room condition for 2 to 24 hours.	
8.2	Humiidity	Meet Table 4. Table 4 Appearance	BNP002	maged. 800 MΩ min.	Temperature : 85 ± 2 °C Humidity : $80 \sim 85$ %(RH) Time : $240 \pm_{0}^{12}$ hours Then measured after exposure in the room condition for 2 to 24 hours.	
8.3	Humidity Load	I.R. Insertion Loss	Type BNP004 Type Meet i	500 MΩ min.	Temperature: $85 \pm 2 ^{\circ}\text{C}$ Humidity: $80 \sim 85 ^{\circ}\text{(RH)}$ Rated Voltage: $50 ^{\circ}\text{V}$ Time: $240 \pm_{0}^{12} ^{\circ}$ hours Then measured after exposure in the room condition for 2 to 24 hours.	
8.4	Heat Life				Temperature: 125 ± 3 °C Voltage: Rated Voltage × 1.5 Time: 500 ± 2 4 hours Then measured after exposure in the room condition for 2 to 24 hours.	

9. 🚹 Caution

Limitation of Applications

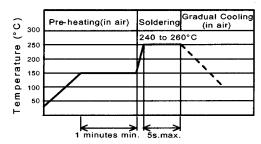
Please contact us before using our products for the applications listed below which require especially high reliability for the prevention of defects which might deirectly cause damage to the third party's life, body or property.

- (1)Aircraft equipment (2)Aerospace equipment (3)Undersea equipment (4)Power plant control equipment
- (5)Medical equipment (6)Transportation equipment(automobiles, trains, ships, etc.) (7)Traffic signal equipment
- (8) Disaster prevention / crime prevention equipment (9) Data-processing equipment
- (10)Applications of similar complexity or with reliability requirements comparable to the applications listed in the above

10. Notice

10.1. Soldering

- (1) Use Rosin-based flux. Do not use strong acidic flux with halide content exceeding 0.2 (wt)% (chlorine conversion value).
- (2) Standard flow soldering profile.



Pre-heating	150 °C , 60 seconds min.
Solder Temperature	240 ~ 260 °C , 5 seconds within

(3) Products and the leads should not be subjected to any mechanical stress during soldering process. (and also while subjected to the equivalent high temperature.)

10.2. Cleanig

Products shall be cleaned on the following conditions.

- (1) Cleaning temperature shall be limited to 60 °C max. (40 °C max. for fluoride and alcohol type cleaner.)
- (2) Ultrasonic cleaning shall comply with the following conditions, with avoiding the resonance phenomenon at the mounted products and P.C.B.

Power: 20 W / I max. Frequency: 28 kHz to 40 kHz Time: 5 minutes max.

- (3) Cleaner
 - 1.Cleaner
 - · Isopropyl alcohol (IPA)
 - · HCFC-225
 - 2. Aqueous agent
 - Surface Active Agent Type (CLEANTHROUGH-750H)
 - Hydrocarbon Type (TECHNOCLEANER-335)
 Higher Alcohol Type (PINE ALPHA ST-100S)
 - · Alkali Saponification Type (* AQUACLEANER-240)
- * Alkali saponification shall be diluted to 20% volume with de-ionized water.
- (4) There shall be no residual flux and residual cleaner after cleaning.

In the case of using aqueous agent, products shall be dried completely after rinse with de-ionized water in order to remove the cleaner.

(5) The surface of products may become dirty whitely after cleaning.

But there is no deterioration on mechanical, electrical characteristics and reliability.

- (6) Other cleaning
 - Please contact us.

10.3. Operating Environment

- (1) Do not use products in corrosve gases such as chlorine gas, acid or sulfide gas.
- (2) Do not use products in the environment where water, oil or organic solvents may adhere to product.

10.4. Storage condition

(1) Storage period

Products which inspected in MURATA over 12 months ago should be examined and used, which can be confirmed with inspection No. marked on the container.

« Expression of Inspection No. »

□□ <u>0000</u> <u>×××</u>

(1) (2)

(1) Factory Code

(2) Date of outgoing inspection

(3) Serial No.

First digit: Year / Last digit of year

Second digit : Month / Jan. to Sep. \rightarrow 1 ~ 9

(3)

Oct. ~ Dec. \rightarrow O,N,D

Third, Fourth digit

: Day

(2) Storage environment condition

· Products should be storage in the warehouse on the following conditions.

Temperature : -10 °C to + 40 °C

Humidity

: 30 % to 70 % relative humidity No rapid change on temperature and humidity

- Don't keep products in corrosive gases such as sulfur, chlorine gas or acid, or it may cause oxidization of electrode, resulting in poor solderability.
- Products should be storaged on the palette for the prevention of the influence from humidity, dust and so on.
- · Products should be storaged in the warehouse without heat shock, vibration, direct sunlight and so on.
- · Products should be storaged under the airtight packaged condition.
- (3) Delivery

Care should be taken when transporting or handling product to avoid excessive vibration or mechanical shock.

11. /\ Notes

- (1) Please make sure that your product has been evaluated and confirmed against your specifications when our product is mounted to your product.
- (2) All the items and parameters in this approval sheet for 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.
- (3) Please return one duplicate of this product specification to us with your receipt signature.

 If the duplicate is not returned by two month after issued date, this product specification will be deemed to have been received by you.
- (4) We consider it not appropriate to include other terms and conditions for transaction warranty in product specifications, drawings or other technical documents. Therefore, if your original part of this product specification includes such terms and conditions as warranty clause, product liability clause, or intellectual property infringement liability clause, we will not be able to accept such terms and conditions unless they are based on the governmental regulation or they are stated in a separate contract agreement.