1. Standard Land Pattern Dimensions

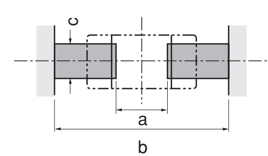
Land Pattern + Solder Resist
Land Pattern
Solder Resist

(in mm)

BLM15
BLM18
BLM21
BLM31
BLM41

●Reflow and Flow

BLM Series (Except for BLM□□P series)

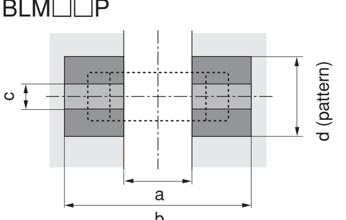


Type	Soldering	a	b	c
BLM15*1	Reflow	0.4	1.2-1.4	0.5
BLM18*2 **(Except for 18PG)**	Flow	0.7	2.2-2.6	0.7
	Reflow		1.8-2.0	
BLM21 (Except for 21PG)	Flow/ Reflow	1.2	3.0-4.0	1.0
BLM31 (Except for 31PG)	Flow/ Reflow	2.0	4.2-5.2	1.2

*1 **BLM15** is specially adapted for reflow soldering.

*2 **BLM18A_WH** series is designed for conductive glue mounting method, not for normal soldering method. Please contact us for applicable mounting method for **BLM18A_WH** series.

BLM□□P



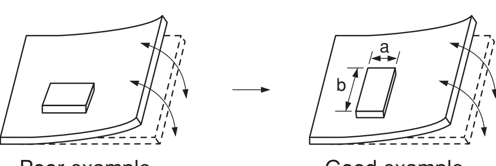
Type	Rated Current (A)	Soldering	a	b	c	Land pad thickness and dimension d		
						18μm	35μm	70μm
BLM18PG	0.5-1.5	Flow/ Reflow	0.7	Flow 2.2-2.6 Reflow 1.8-2.0	0.7	0.7	0.7	0.7
	2					1.2	0.7	0.7
	3					2.4	1.2	0.7
BLM21PG	1.5		1.2	3.0-4.0	1.0	1.0	1.0	1.0
	2					1.2	1.0	1.0
	3					2.4	1.2	1.0
	6					6.4	3.3	1.65
BLM31PG	1.5/2		2.0	4.2-5.2	1.2	1.2	1.2	1.2
	3					2.4	1.2	1.2
	6					6.4	3.3	1.65
BLM41PG	1-2		3.0	5.5-6.5		1.2	1.2	1.2
	3					2.4	1.2	1.2
	6					6.4	3.3	1.65

• Do not apply narrower pattern than listed above to BLM□□P. Narrow pattern can cause excessive heat or open circuit.

● PCB Warping

PCB should be designed so that products are not subjected to the mechanical stress caused by warping the board.

Products should be located in the sideways direction (Length: a<b) to the mechanical stress.



Poor example   Good example

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2. Solder Paste Printing and Adhesive Application

When reflow soldering the Chip Ferrite Beads, the printing must be conducted in accordance with the following cream solder printing conditions.
If too much solder is applied, the chip will be prone to damage by mechanical and thermal stress from the PCB and may crack. In contrast, if too little solder is applied, there is the potential that the termination strength will be insufficient, creating the potential for detachment.
Standard land dimensions should be used for resist and copper foil patterns.

When flow soldering the Chip Ferrite Beads, apply the adhesive in accordance with the following conditions.
If too much adhesive is applied, then it may overflow into the land or termination areas and yield poor solderability.
In contrast, if insufficient adhesive is applied, or if the adhesive is not sufficiently hardened, then the chip may become detached during flow soldering process.

(in mm)

Series	Solder Paste Printing	Adhesive Application
BLM15 **BLM18** **BLM21** **BLM31** **BLM41**	●Ensure that solder is applied smoothly to a minimum height of 0.2mm to 0.3mm at the end surface of the part. ●Guideline of solder paste thickness: 100-200µm 0.2–0.3mm min.	Coating amount is illustrated in the following diagram. a:20–70µm b:30–35µm c:50–105µm Chip Solid Inductor Bonding agent PCB Land

3. Standard Soldering Conditions

(1) Soldering Methods

Use flow and reflow soldering methods only.
Use standard soldering conditions when soldering chip EMI suppression filters.
In cases where several different parts are soldered, each having different soldering conditions, use those conditions requiring the least heat and minimum time.

Solder: H60A H63A solder (JIS Z 3238)
In case of lead-free solder, use Sn-3.0Ag-0.5Cu solder. Use of Sn-Zn based solder will deteriorate performance of products. If using NFM series with Sn-Zn based solder, please contact Murata in advance.

Flux:

- Use Rosin-based flux.
  In case of DLW31/43 series, use Rosin-based flux with converting chlorine content of 0.06 to 0.1wt%.
  In case of using RA type solder, products should be cleaned completely with no residual flux.
- Do not use strong acidic flux (with chlorine content exceeding 0.20wt%)
- Do not use water-soluble flux.

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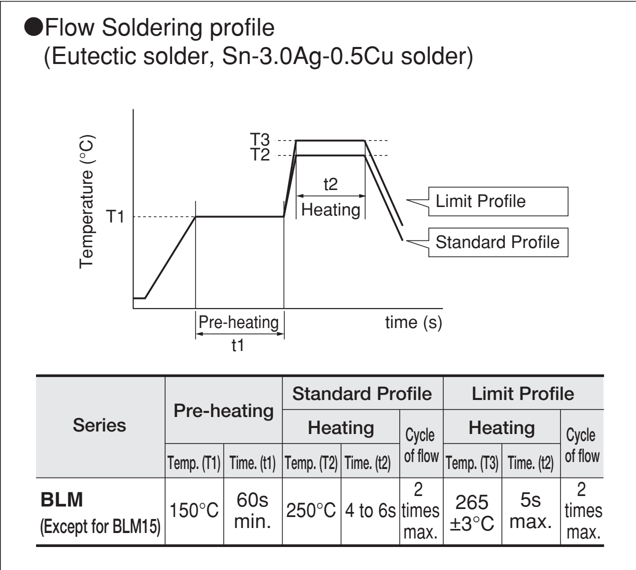
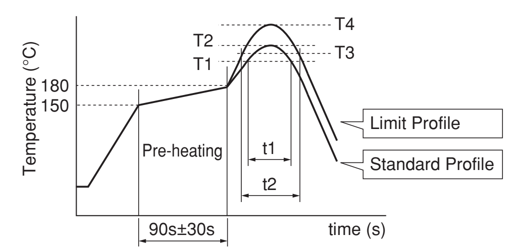
(2) Soldering Profile

●Flow Soldering profile
(Eutectic solder, Sn-3.0Ag-0.5Cu solder)



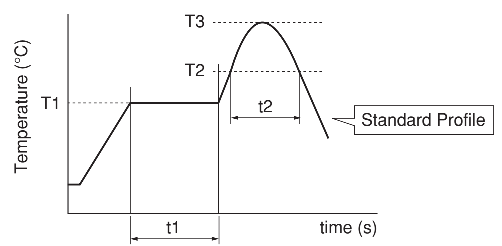
Series	Pre-heating		Standard Profile			Limit Profile		
			Heating		Cycle of flow	Heating		Cycle of flow
	Temp. (T1)	Time. (t1)	Temp. (T2)	Time. (t2)		Temp. (T3)	Time. (t2)	
BLM (Except for BLM15)	150°C	60s min.	250°C	4 to 6s	2 times max.	265 ±3°C	5s max.	2 times max.

●Reflow Soldering profile
①Soldering profile for Lead-free solder (Sn-3.0Ag-0.5Cu)



Series	Standard Profile				Limit Profile			
	Heating		Peak temperature (T2)	Cycle of reflow	Heating		Peak temperature (T4)	Cycle of reflow
	Temp. (T1)	Time. (t1)			Temp. (T3)	Time. (t2)		
BLM	220°C min.	30 to 60s	245 ±3°C	2 times max.	230°C min.	60s max.	260°C /10s	2 times max.

②Soldering profile for Eutectic solder
(Limit profile: refer to ①)



Series	Pre-heating		Standard Profile			
			Heating		Peak temperature (T3)	Cycle of reflow
	Temp. (T1)	Time. (t1)	Temp. (T2)	Time. (t2)		
BLM	150°C	60s min.	183°C min.	60s max.	230°C	2 times max.

(3) Reworking with Soldering Iron

The following conditions must be strictly followed when using a soldering iron.
Pre-heating: 150°C 60s min.
Soldering iron power output: 80W max.
Temperature of soldering iron tip / Soldering time:
BLM — 350°C max./3s max. (2 Times max.)
Do not allow the tip of the soldering iron to directly contact the chip.
For additional methods of reworking with a soldering iron, please contact Murata engineering.

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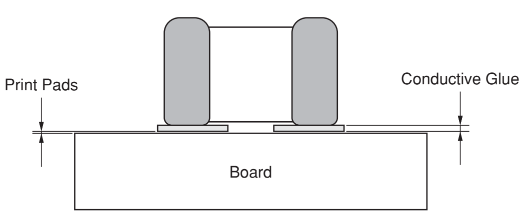
4. Mounting on-board with Conductive Glue of BLM18AG_WH1

Please adhere rigidly to the condition below which shows the method of mounting with conductive glue.
Please coat print pads with conductive glue using metal mask and metal squeegee, and then mount our products on the substrates with a mount machine or human hand.
Please put the substrates into a oven (140 to 150°C) for 30 minutes in order to cure the adhesive.
Please check whether the chips and the substrates are connected with the conductive glue or not and there is no electrical short of the conductive glue.



1. Board	Ceramic Board or Alumina Board
2. Thickness of Glue	30 to 50μm
3. Recommended Conductive Glue	PC3000 (Manufactured by Heraeus)

5. Cleaning

Following conditions should be observed when cleaning chip EMI filter.

(1) Cleaning Temperature: 60°C max. (40°C max. for alcohol type cleaner)

(2) Ultrasonic
Output: 20W/liter max.
Duration: 5 minutes max.
Frequency: 28 to 40kHz

(3) Cleaning agent
The following list of cleaning agents have been tested on the individual components. Evaluation of final assembly should be completed prior to production.
Do not clean BLM18AG□□□WH1 series. Before cleaning, please contact Murata engineering.
(a) Alcohol cleaning agent
Isopropyl alcohol (IPA)
(b) Aqueous cleaning agent
Pine Alpha ST-100S

(4) Ensure that flux residue is completely removed.
Component should be thoroughly dried after aqueous agent has been removed with deionized water.

For additional cleaning methods, please contact Murata engineering.