

# BF 1109 Series

Multilayer Chip Band-Pass Filters

## Features

- ❖ Ultra small SMD type with low loss at pass-band and high attenuation at stop-band.
- ❖ RoHS compliant

## Applications

- ❖ 2.4 GHz wireless communication systems, including, WLAN card, Bluetooth modules, etc



## Specifications

Part Number	Frequency Range (MHz)	Insertion Loss @ BW (dB)	Return Loss @ BW (dB)	Frequency (MHz)	Attenuation (dB)
BF1109-L2R4NCA_	2400~2500	0.8 typ./1.0 max. @ 25°C 1.2 max. @ 85°C 1.3 max. @ 105°C	15 min.	50 ~ 960	20 min.
				1560 ~ 1606	30 min.
				1710 ~ 1990	15 min.
				3600	10 min.
				4800 ~ 5000	35 min.
				7200 ~ 7500	25 min.

Q'ty/Reel (pcs)

: 6,000

Operating Temperature Range

: -40 ~ +105 °C

Storage Temperature Range

: -40 ~ +105 °C

Storage Period

: 12 months max.\*

\*12 months in vacuum sealed bag and 1 week after opened. Please keep unused parts in vacuum sealed bags.

Solder Paste

: SAC 305 type is recommended.

Power Capacity

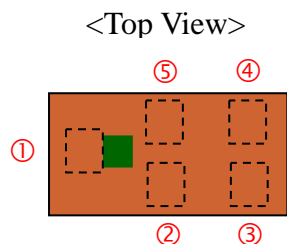
: 3W max.

## Part Number

**BF** **1109** - **L** **2R4** **NCA** **□** **/LF**  
 ① ② ③ ④ ⑤ ⑥ ⑦

① Type	BF : Band-Pass Filter	② Dimensions ( L x W )	1.1 x 0.9 mm
③ Material Code	L	④ Frequency Range	2R4=2400MHz
⑤ Specification Code	NCA	⑥ Packaging	T: Tape & Reel B: Bulk
⑦ Soldering	/LF=lead-free		

## Terminal Configuration



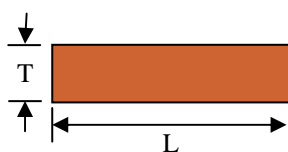
No.	Terminal Name	No.	Terminal Name
①	IN	④	OUT
②	GND	⑤	GND
③	GND		

## Dimensions and Recommended PC Board Pattern

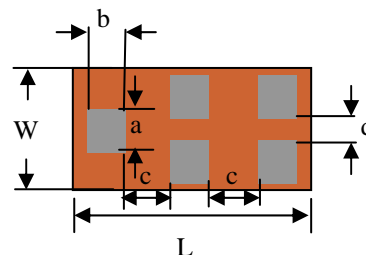
Unit: mm



<Top View>

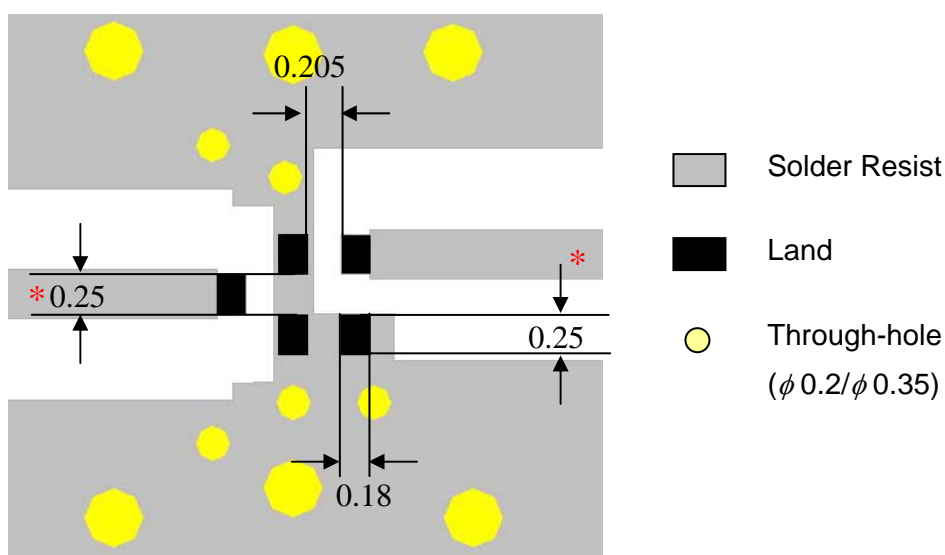


<Side View>



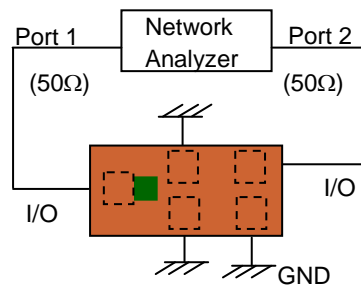
<Bottom View>

Mark	L	W	T	a	b	c	d
Dimensions	$1.1 \pm 0.1$	$0.9 \pm 0.1$	0.6 max	$0.25 \pm 0.05$	$0.18 \pm 0.05$	$0.205 \pm 0.05$	$0.25 \pm 0.05$

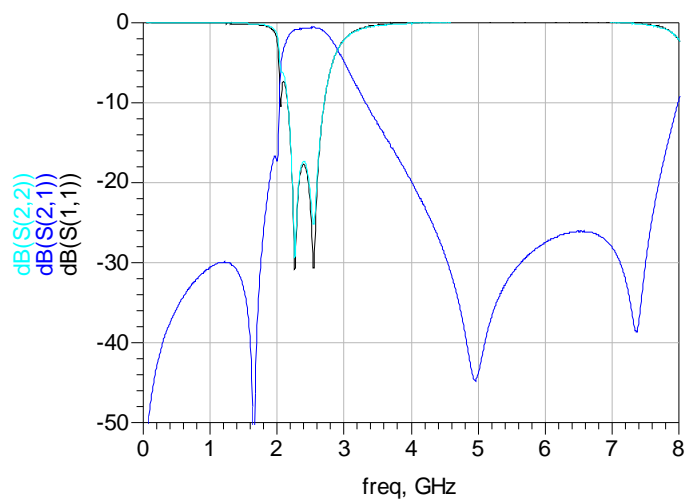


\* Line width should be designed to match  $50 \Omega$  characteristic impedance, depending on PCB material and thickness.

## Measuring Diagram



## Electrical Characteristics (T=25°C)

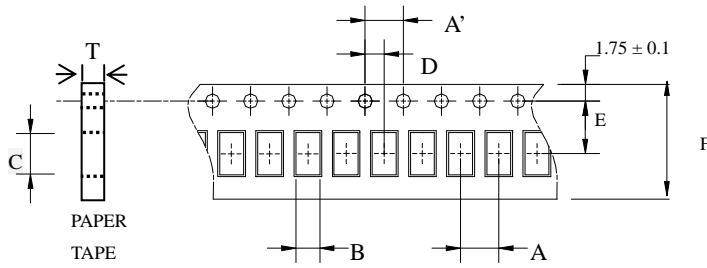


## Notes

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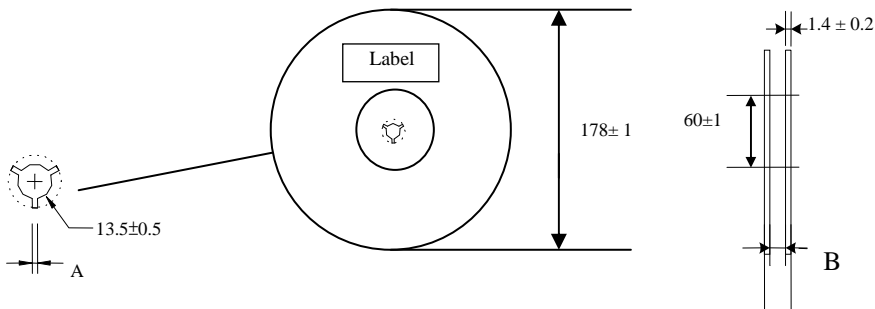
## Taping Specifications

### ❖Tape Dimensions (Unit: mm) & Quantity



Type	A	A'	B	C	D	E	F	T	Quantity/reel	Tape material
1109	4.0±	4.0±	1.08±	1.25±	2.0±	3.5±	8.0±	0.60±	6,000pcs	Paper
	0.1	0.1	0.05	0.05	0.05	0.05	0.1	0.03		

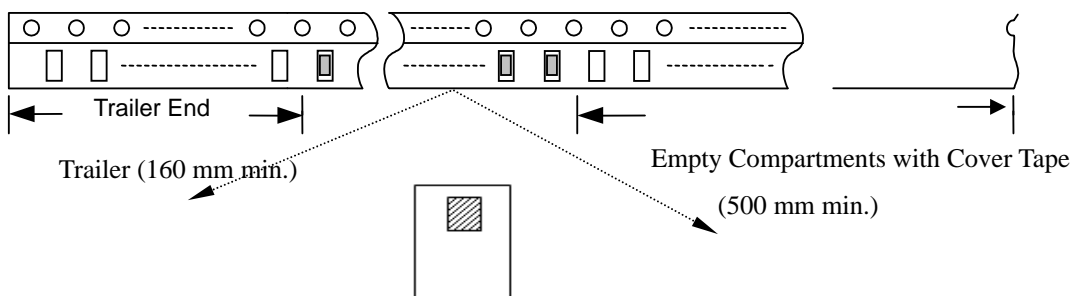
### ❖Reel Dimensions (Unit: mm)



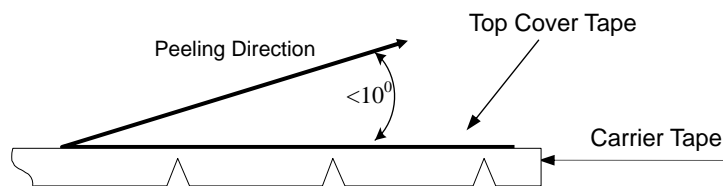
Label: Customer's Name,  
ACX P/N, Q'ty, Date,  
ACX Corp.

Type	A	B
1109	2.3±0.5	9.0±0.3

### ❖Leader and Trailer Tape



❖ **Peel-off Force**



Peel-off force should be in the range of 0.1 – 0.6 N at a peel-off speed of  $300 \pm 10$  mm/min .

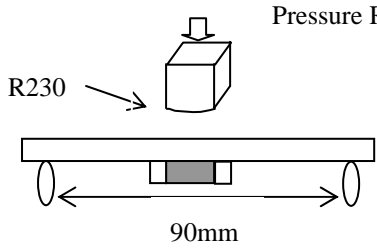
❖ **Storage Conditions**

- (1) Temperature: 5 ~35°C , relative humidity (RH): 45~75%.
- (2) Non-corrosive environment.

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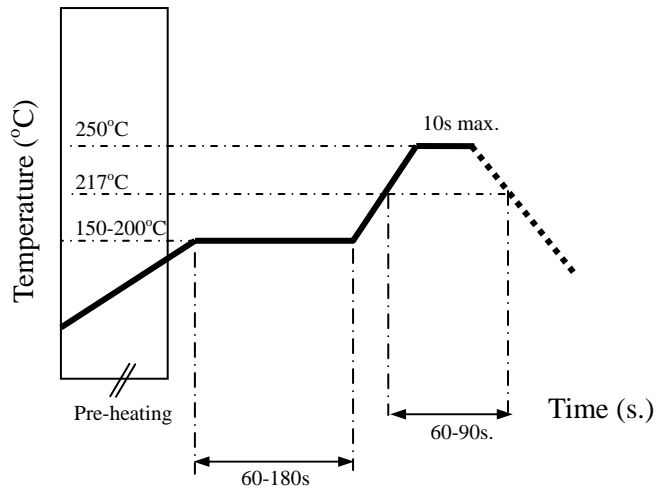
## Mechanical & Environmental Characteristics

Item	Requirements	Procedure
Solderability	<ol style="list-style-type: none"> <li>No apparent damage</li> <li>More than 75% of the terminal electrode shall be covered with new solder.</li> </ol>	<ol style="list-style-type: none"> <li>Preheat: <math>120 \pm 5^\circ\text{C}</math></li> <li>Solder: <math>245 \pm 5^\circ\text{C}</math> for <math>5 \pm 1</math> sec</li> </ol>
Soldering strength (Termination Adhesion)	<ol style="list-style-type: none"> <li>3N minimum</li> </ol>	<ol style="list-style-type: none"> <li>Solder specimen onto test jig.</li> <li>Apply push force at 0.5mm/s until electrode pads are peeled off or ceramic are broken. Pushing force is applied to longitude direction.</li> </ol>
Deflection (Substrate Bending)	<ol style="list-style-type: none"> <li>No apparent damage</li> <li>Fulfill the electrical specification</li> </ol>	<ol style="list-style-type: none"> <li>Solder specimen onto test jig (FR4, 1.6mm) using the recommend soldering profile.</li> <li>Apply a bending force of 2mm deflection.</li> </ol> 
Heat/Humidity Resistance	<ol style="list-style-type: none"> <li>No apparent damage</li> <li>Fulfill the electrical specification after test</li> </ol>	<ol style="list-style-type: none"> <li>Temperature: <math>85 \pm 2^\circ\text{C}</math></li> <li>Humidity: 90% ~ 95% RH</li> <li>Duration: <math>1000 \pm 48</math>hrs</li> <li>Recovery: 1-2hrs</li> </ol>
Thermal shock (Temperature Cycle)	<ol style="list-style-type: none"> <li>No apparent damage</li> <li>Fulfill the electrical specification after test</li> </ol>	<ol style="list-style-type: none"> <li>One cycle/step 1 : <math>125 \pm 5^\circ\text{C}</math> for 30 min step 2 : <math>-40 \pm 5^\circ\text{C}</math> for 30 min</li> <li>No of cycles : 100</li> <li>Recovery: 1-2 hrs</li> </ol>
Low Temperature Resistance	<ol style="list-style-type: none"> <li>No apparent damage</li> <li>Fulfill the electrical specification after test</li> </ol>	<ol style="list-style-type: none"> <li>Temperature: <math>-40 \pm 5^\circ\text{C}</math></li> <li>Duration: <math>500 \pm 24</math>hrs</li> <li>Recovery: 1-2hrs</li> </ol>

## Soldering Conditions

### ❖ Typical Soldering Profile for Lead-free Process

Reflow Soldering :



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