

BF 1411 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	Freq. Range (MHz)	Insertion Loss @BW(dB)	Return Loss @ BW(dB)	Frequency	Attenuation (dB)
BF1411-L2R4NCA_	2400 ~ 2500	0.95 typ. / 1.0 max. @25 °C 1.2 max. @105 °C	14 typ. / 10 min.	50~ 960 MHz	34 typ. / 15 min.
				1710 ~ 1990 MHz	15 typ. / 10 min.
				3600 MHz	16.5 typ. / 15 min.
				4800~5000 MHz	33 typ. / 30 min.
				5000~7200 MHz	31 typ. / 25 min.

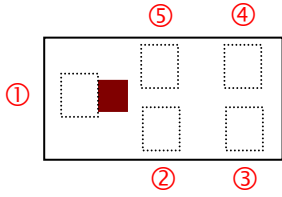
Q'ty/Reel (pcs) : 4000
 Operating Temperature Range : -40 ~ +105 °C
 Storage Temperature Range : -40 ~ +85 °C
 Storage Period : 12 months max.*
 *12 months in vacuum sealed bag and 1 week after opened. Please keep unused parts in vacuum sealed bags.
 Solder Paste : SAC 305 type is recommended.
 Power Capacity : 3W max.

Part Number

BF **1411** - **L** **2R4** **NCA** **□** **/LF**
 ① ② ③ ④ ⑤ ⑥ ⑦

① Type	BF : Band-Pass Filter	② Dimensions (L x W)	1.4 x 1.1 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

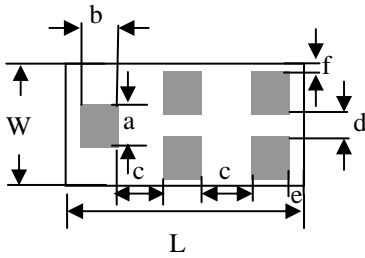


<Top View>

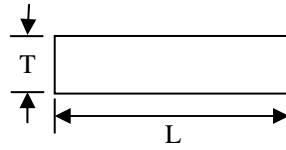
No.	Terminal Name	No.	Terminal Name
①	IN	④	OUT
②	GND	⑤	GND
③	GND		

Dimensions and Recommended PC Board Pattern

Unit : mm

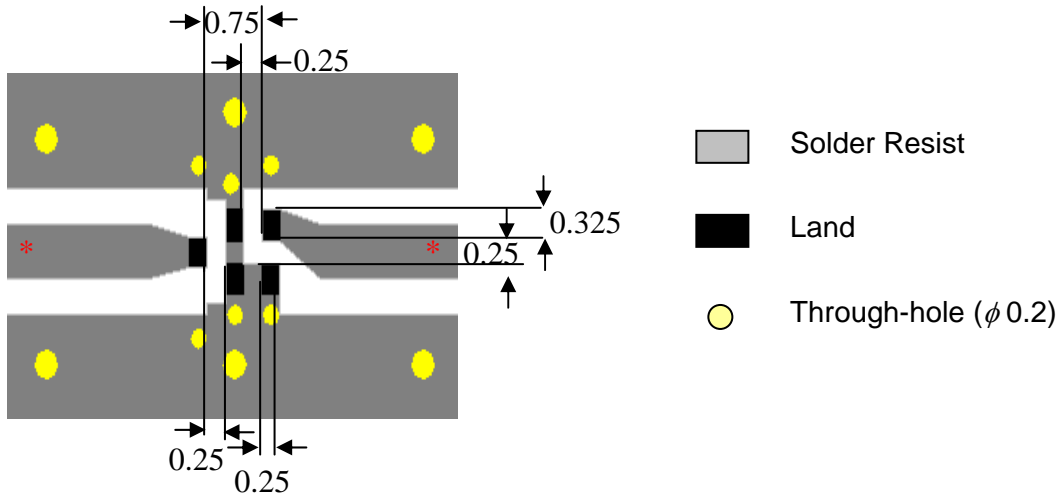


< Bottom View >



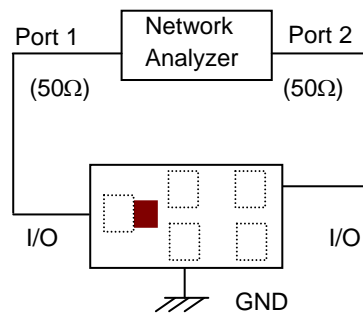
< Side View >

Mark	L	W	T	a	b	c	d	e	f
Dimensions	1.4 ±	1.1 ±	0.6	0.325 ±	0.25 ±	0.25 ±	0.25 ±	0.075±	0.1±
	0.15	0.15	max	0.1	0.1	0.05	0.05	0.075	0.075

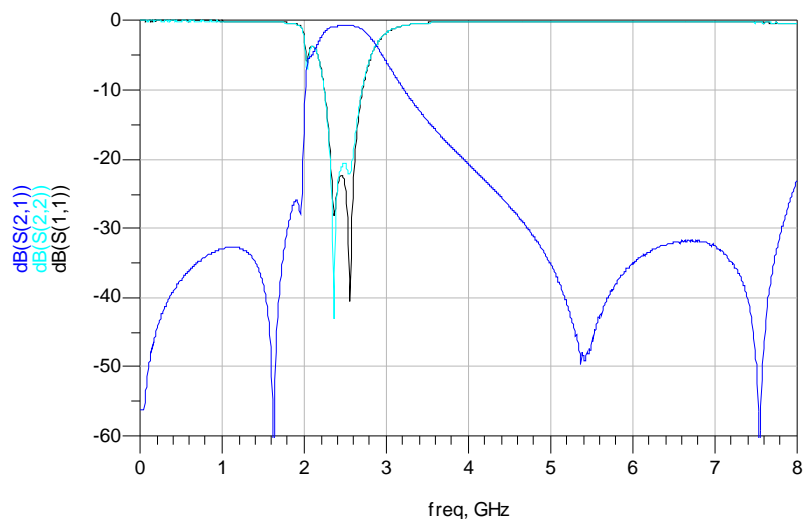


* Line width should be designed to match 50 Ω characteristic impedance, depending on PCB material and thickness.

Measuring Diagram



Electrical Characteristics (T=25°C)

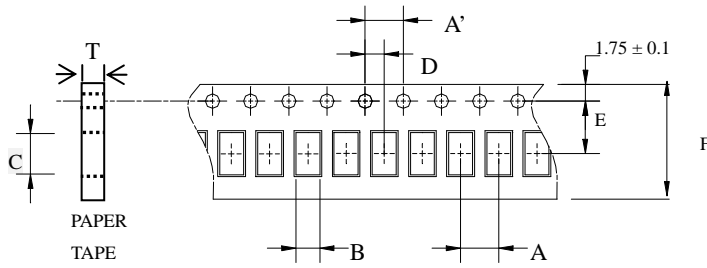


Notes

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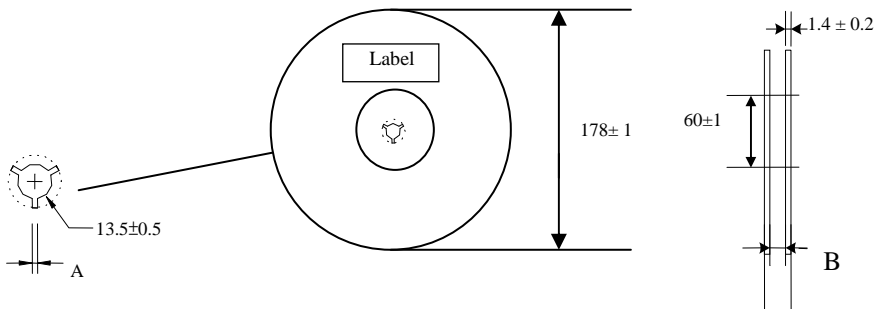
Taping Specifications

❖Tape Dimensions (Unit: mm) & Quantity



Type	A	A'	B	C	D	E	F	T	Quantity/reel	Tape material
1411	4.0±	4.0±	1.36±	1.65±	2.0±	3.5±	8.0±	0.75±	4,000pcs	Paper
	0.1	0.1	0.05	0.05	0.05	0.05	0.1	0.05		

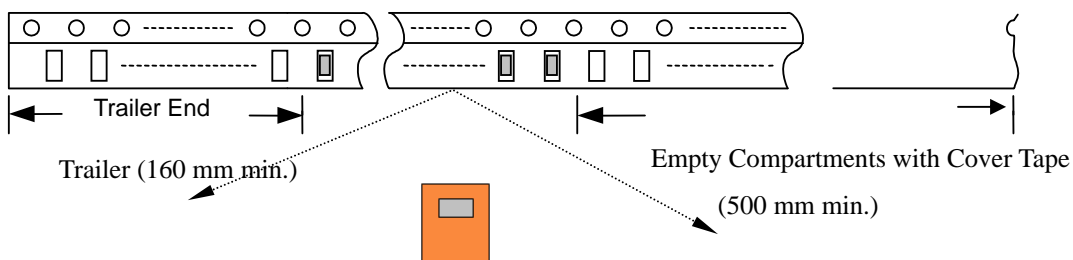
❖Reel Dimensions (Unit: mm)



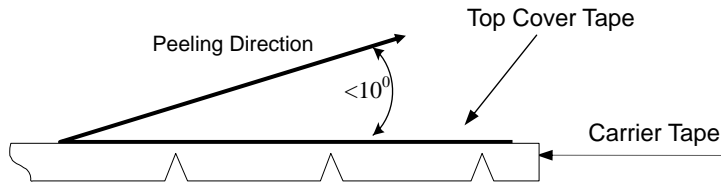
Label: Customer's Name,
ACX P/N, Q'ty, Date,
ACX Corp.

Type	A	B
1411	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 ± 10 mm/min .

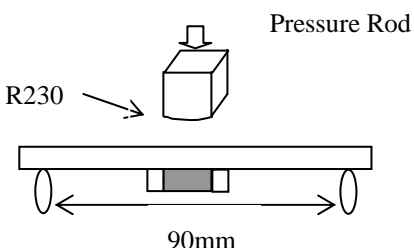
❖ **Storage Conditions**

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

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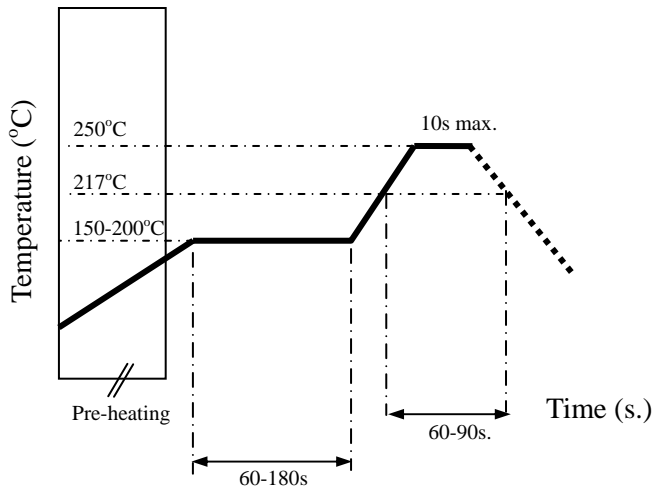
Mechanical & Environmental Characteristics

Item	Requirements	Procedure
Solderability	<ol style="list-style-type: none"> No apparent damage. More than 75% of the terminal electrode shall be covered with new solder. 	<ol style="list-style-type: none"> Preheat: $120 \pm 5^{\circ}\text{C}$ Solder: $245 \pm 5^{\circ}\text{C}$ for 5 ± 1 sec
Soldering strength (Termination Adhesion)	<ol style="list-style-type: none"> 10N minimum. 	<ol style="list-style-type: none"> Solder specimen onto test jig. Apply push force at 0.5mm/s until electrode pads are peeled off or ceramic are broken. Pushing force is applied to longitude direction.
Deflection (Substrate Bending)	<ol style="list-style-type: none"> No apparent damage. Fulfill the electrical specification. 	<ol style="list-style-type: none"> Solder specimen onto test jig (FR4, 1.6mm) using the recommend soldering profile. Apply a bending force of 2mm deflection. 
Heat/Humidity Resistance	<ol style="list-style-type: none"> No apparent damage. Fulfill the electrical specification after test. 	<ol style="list-style-type: none"> Temperature: $85 \pm 2^{\circ}\text{C}$ Humidity: 90% ~ 95% RH Duration: 1000 ± 48hrs Recovery: 1-2hrs
Thermal shock (Temperature Cycle)	<ol style="list-style-type: none"> No apparent damage. Fulfill the electrical specification after test. 	<ol style="list-style-type: none"> One cycle/step 1 : $125 \pm 5^{\circ}\text{C}$ for 30 min step 2 : $-40 \pm 5^{\circ}\text{C}$ for 30 min No of cycles : 100 Recovery: 1-2 hrs
Low Temperature Resistance	<ol style="list-style-type: none"> No apparent damage. Fulfill the electrical specification after test. 	<ol style="list-style-type: none"> Temperature: $-40 \pm 5^{\circ}\text{C}$ Duration: 500 ± 24hrs Recovery: 1-2hrs

Soldering Conditions

❖ Typical Soldering Profile for Lead-free Process

Reflow Soldering :



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