

# FB2015 Series

## Multilayer Chip Band Pass Filter + Balun

### Features

❖ Monolithic SMD with small, low-profile and light-weight type.

### Applications

❖ For LNB applications.



### Specifications

Part Number	Freq. Range (MHz)	Unbalanced Impedance (ohm)	Balanced Impedance (ohm)	Insertion Loss @ BW (dB)	VSWR @ BW	25 MHz Ripple (dB)	Phase Diff. (degree)	Amp. Diff. (dB)	Attenuation (dB)
<b>FB2015-07L1R2B_</b>	900 ~ 1450	50	75	4.0 max.	2.0 max.	0.3 max.	180±20	2.0 max.	23min. @ 1650~2150MHz

Q'ty/Reel (pcs) : 4,000  
 Operating Temperature Range : -40 ~ +85 °C  
 Storage Temperature Range : +5 ~ +35 °C, Humidity 45~75%RH  
 Storage Period : 12 months max.\*

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

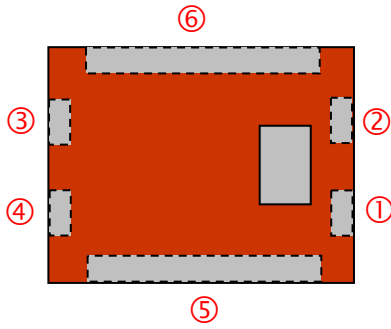
Solder Paste : SAC 305 type is recommended.  
 Power Capacity : 0.5W max.

### Part Number

**FB**   **2015** -   **07**   **L**   **1R2**   **B**   **□**   **□**  
 ①   ②   ③   ④   ⑤   ⑥   ⑦   ⑧

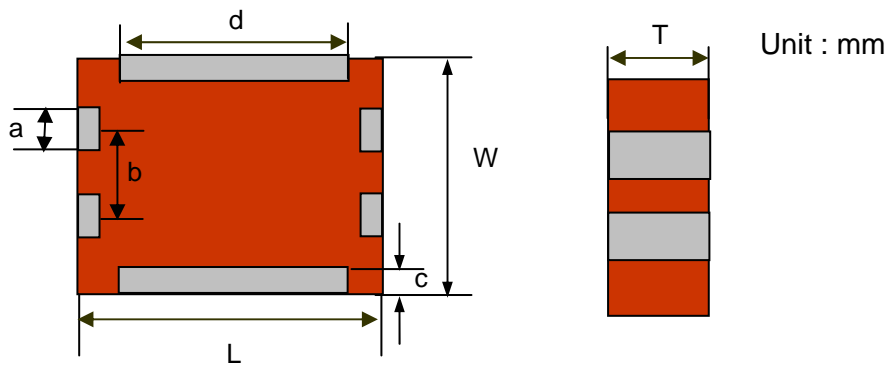
① Type	FB : Band Pass Filter + Balun	② Dimensions ( L x W )	2.0 x 1.5 mm
③ Balanced Impedance	07 : 75 ohm	④ Material Code	L
⑤ Central Frequency	1R2 : 1200MHz	⑥ Specification Code	B
⑦ Packaging	T: Tape & Reel B: Bulk	⑧ Soldering	=lead-containing /LF=lead-free

## Terminal Configuration



No.	Terminal Name	No.	Terminal Name
①	Unbalanced Port	④	Balanced Port
②	GND	⑤	GND
③	Balanced Port	⑥	GND

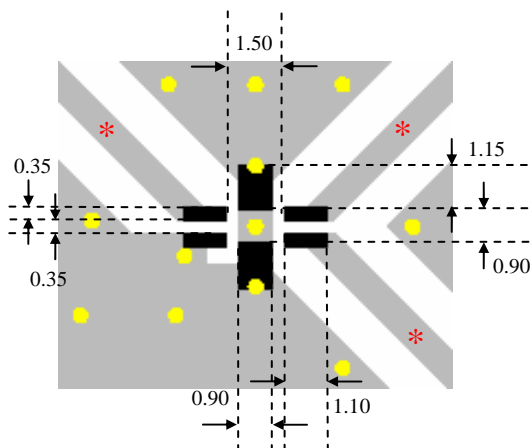
## Dimensions and Recommended PC Board Pattern



Bottom View

Side View

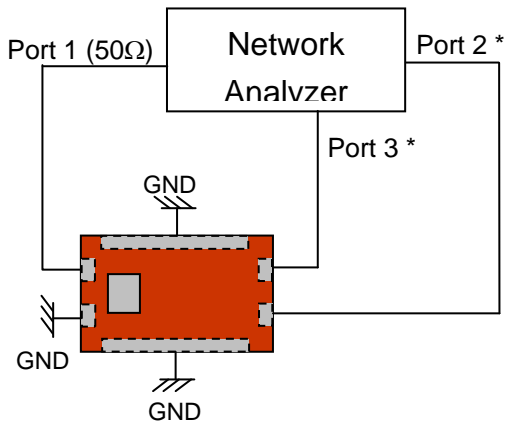
Mark	L	W	T	a	b	c	d
Dimensions	2.0 ±	1.5 ±	0.95 ±	0.3 ±	0.7 ±	0.25 ±	0.8 ±
	0.15	0.15	0.1	0.1	0.15	0.15	0.15



- Solder Resist
- Land
- Through-hole ( $\phi 0.3$ )

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

## Measuring Diagram



Port 1: Unbalanced Port

Ports 2 and 3: Balanced Port

$$IL = S_{ds21}$$

$$RL = S_{ss11}$$

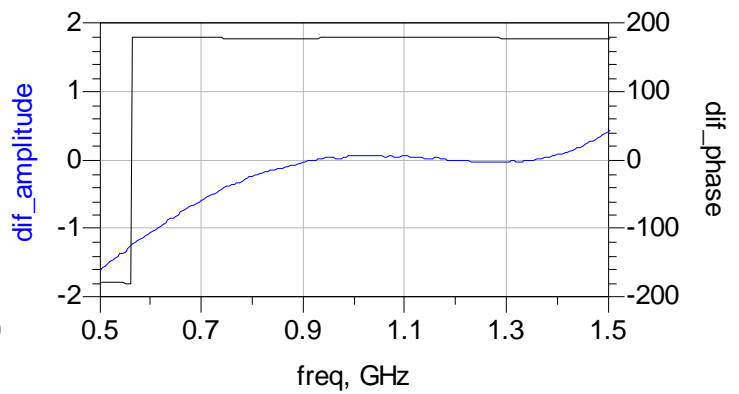
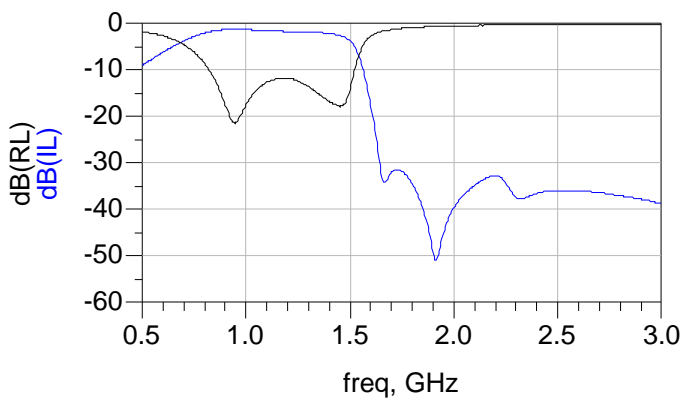
$$\text{Amp\_balance} = \text{dB}(S(2,1)/S(3,1))$$

$$\text{Phase\_balance} = \text{Phase}(S(2,1)/S(3,1))$$

\*Impedance for ports 2 and 3 = Balanced Impedance/2

\*\*E5071B from Agilent

## Typical Electrical Characteristics (T=25°C)

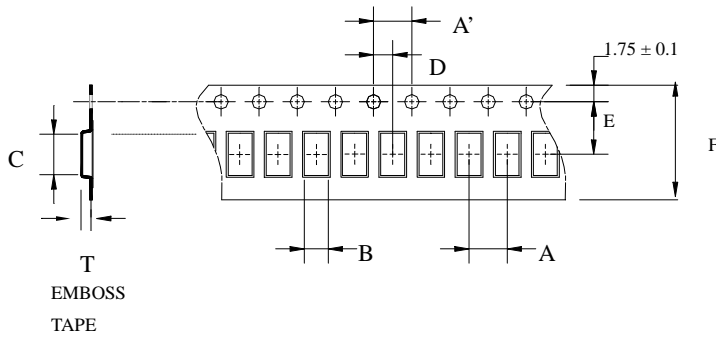


## Notes

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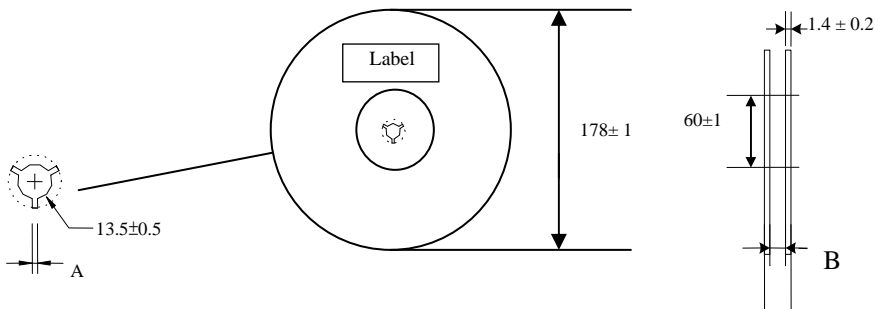
## Taping Specifications

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



Type	A	A'	B	C	D	E	F	T	Quantity/reel	Tape material
2015	4.0±	4.0±	1.85±	2.40±	2.0±	3.5±	8.0±	1.05±	4,000pcs	Plastic (Embossed)
	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.05		

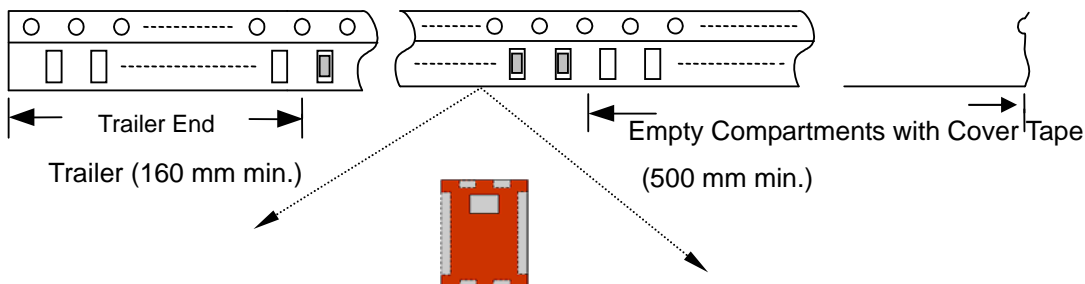
### ❖Reel Dimensions (Unit: mm)



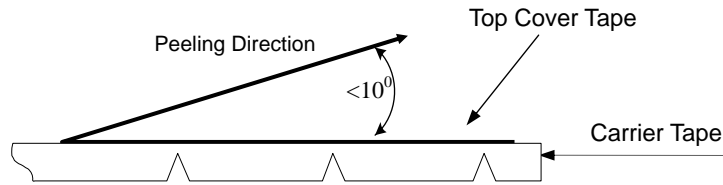
Label: Customer's Name,  
ACX P/N, Q'ty, Date,  
ACX Corp.

Type	A	B
2015	2.3±0.5	9.0±0.3

### ❖Leader and Trailer Tape (Plastic material)



❖ **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 .

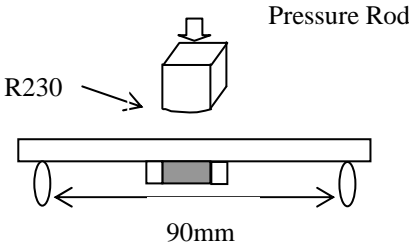
❖ **Storage Conditions**

- (1) Temperature: 15 ~35°C , relative humidity (RH): 45~75%.
- (2) Non-corrosive environment.

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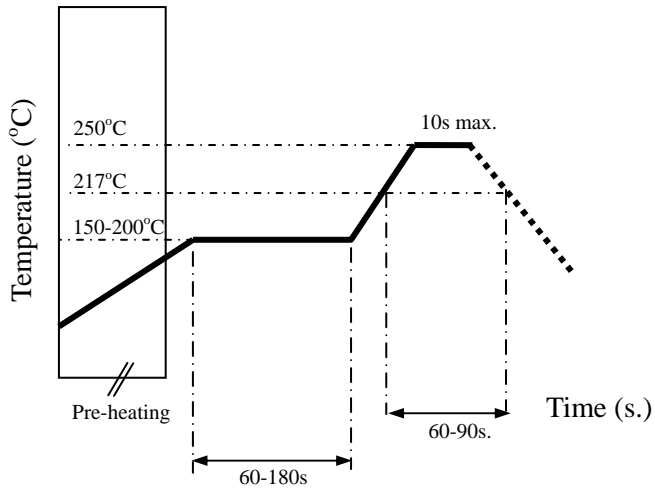
## Mechanical & Environmental Characteristics

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>1kg 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, 0.8mm) 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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