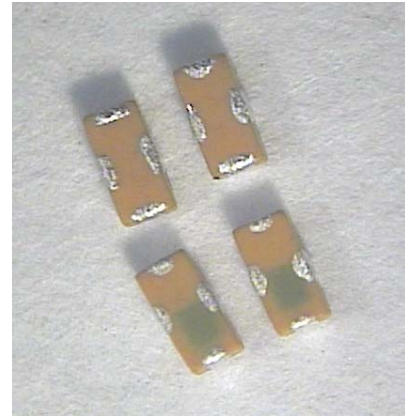


# BL 1005 Series Multilayer Chip Baluns



## Features

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

## Applications

- ❖ 758 ~ 821 MHz wireless communication systems.

## Specifications

Part Number	Frequency Range (MHz)	Unbalanced Impedance (ohm)	Balance Impedance (ohm)	Insertion Loss (dB)	Return Loss (dB)	Phase Difference (degree)	Amplitude Difference (dB)
<b>BL1005-10D0790</b>	758 ~ 821	50	100	0.8max.	15 min.	180 ± 10	2 max.

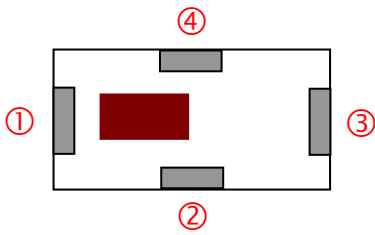
Q'ty/Reel (pcs) : 10000  
 Operating Temperature Range : -40 ~ +85 °C  
 Storage Temperature Range : -40 ~ +85 °C  
 Storage Period : 12 months max.\*  
 \*12 months in vacuum sealed bag and 1 week after opened. Please keep unused parts in vacuum sealed bags.  
 Solder Paste : SAC 305 type is recommended.  
 Power Capacity : 3W max.

## Part Number

**BL**   **1005**   -   **10**   **D**   **0790**   **□**   **/LF**  
 ①   ②   ③   ④   ⑤   ⑥   ⑦

① Type	BL : Balun	② Dimensions ( L x W )	1.0 x 0.5 mm
③ Balun Impedance	10:100 ohm	④ Specification Code	D
⑤ Frequency Range	0790=790MHz	⑥ Packaging	T: Tape & Reel B: Bulk
⑦ Soldering	/LF=lead-free		

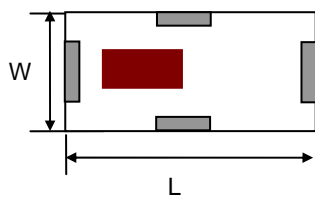
## Terminal Configuration



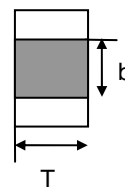
No.	Terminal Name	No.	Terminal Name
①	Balanced Port	③	Balanced Port
②	Unbalanced Port	④	GND

## Dimensions and Recommended PC Board Pattern

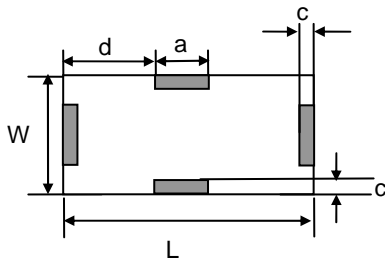
Unit : mm



<Top view>

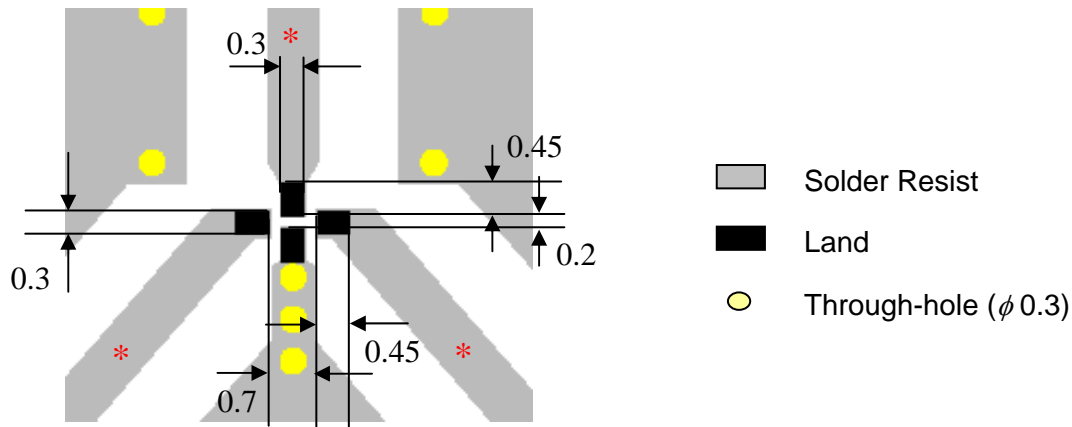


<Side view>



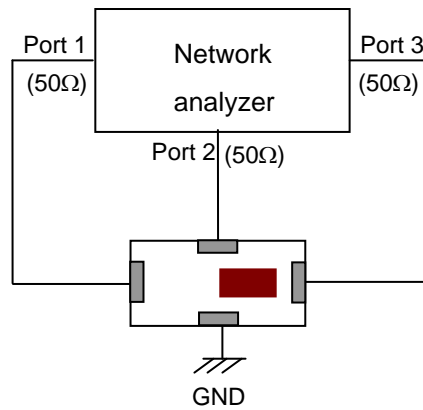
<Bottom view>

Mark	L	W	T	a	b	c	d
Dimensions	1.0 ±	0.5 ±	0.38±	0.3±	0.3±	0.1±	0.35±
	0.1	0.05	0.05	0.10	0.10	0.05	0.1



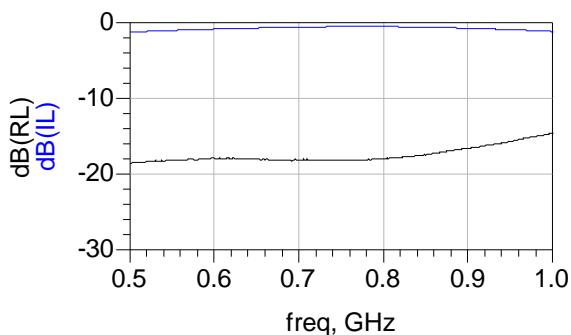
\* Line width should be designed to match 50Ω characteristic impedance, depending on PCB material and thickness.

### Measuring Diagram

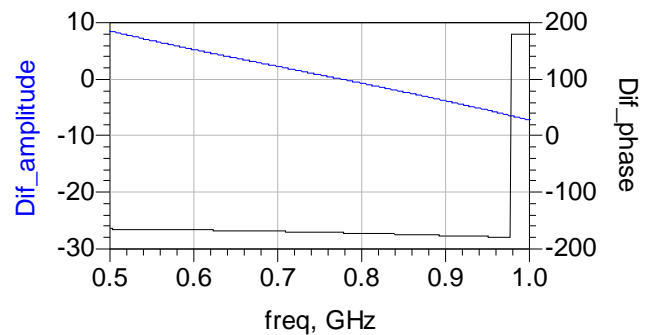


### Typical Electrical Characteristics (T=25°C)

#### Insertion and Return Loss



#### Amplitude and Phase Balance



### Notes

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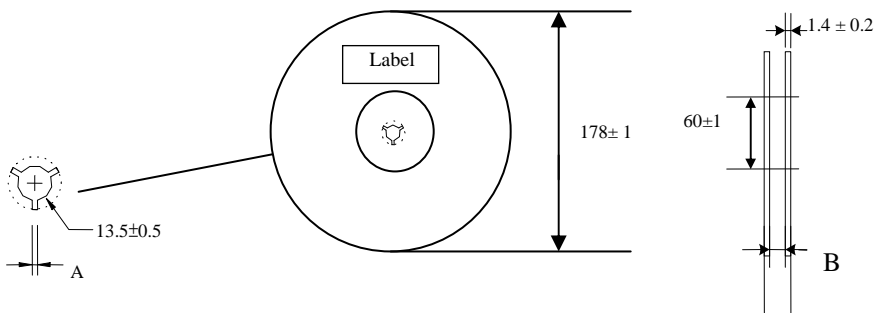
## Taping Specifications

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



Type	A	A'	B	C	D	E	F	T	Quantity/reel	Tape material
1005	2.0±	4.0±	0.62±	1.12±	2.0±	3.5±	8.0±	0.45±	10,000pcs	Paper
	0.05	0.1	0.03	0.03	0.05	0.05	0.1	0.03		

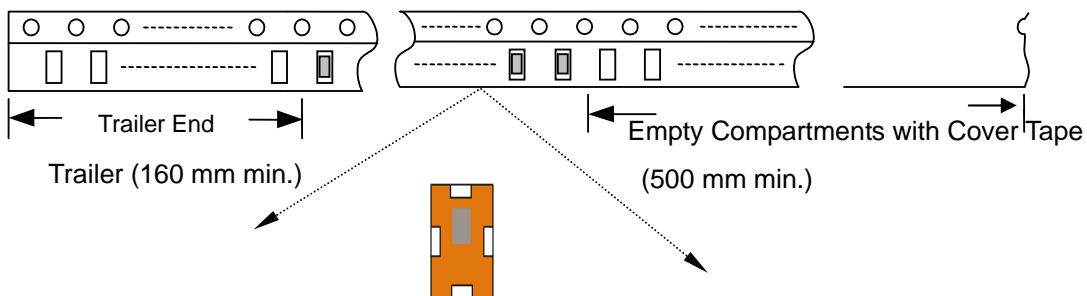
### ❖ Reel Dimensions (Unit: mm)



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

Type	A	B
1005	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 .

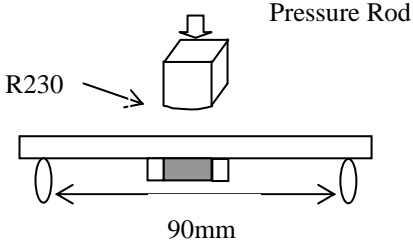
❖ **Storage Conditions**

- (1) Temperature:  $5 \sim 35^{\circ}\text{C}$  , relative humidity (RH): 45~75%.
- (2) Non-corrosive environment.

**Notes**

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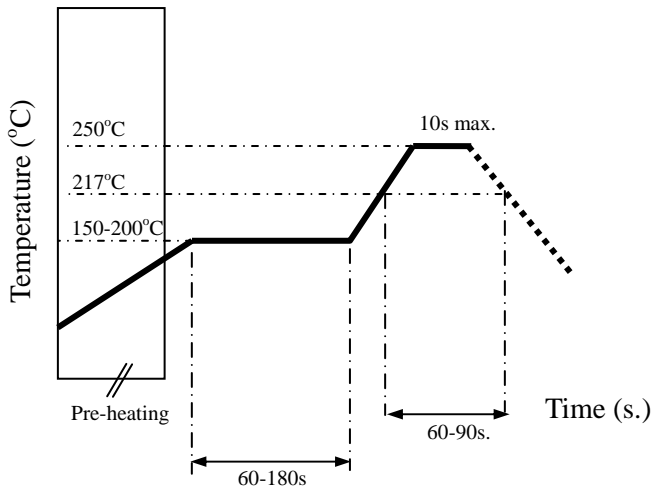
## Mechanical & Environmental Characteristics

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, 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 :



## Notes

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### **Advanced Ceramic X Corp.**

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