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Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

Email & Skype: info@chipsmall.com Web: www.chipsmall.com

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China



# High Frequency Ceramic Solutions

2.4GHz EIA 0202 Micro Balun 1:2 impedance for BLE/WiFi/LTE/Cellular P/N 2450BL05A0100

Detail Specification: 5/2/2017

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## General Specifications

<b>Part Number</b>	2450BL05A0100	<b>Solder Paste</b>	SAC 305 type is recommended
<b>Frequency (MHz)</b>	2300 ~ 2690	<b>Recommended Storage Cond.</b>	+5 ~ +35°C, Humidity 45~75%RH
<b>Unbalanced Impedance</b>	50 (ohms)	<b>Storage Period</b>	18 months max.*
<b>Balanced Impedance (ohm)</b>	100 (ohms)	<b>Reel Quantity</b>	10,000 pcs
<b>Insertion Loss (dB)</b>	0.55 max.		
<b>Return Loss</b>	9.5 dB min.		
<b>Phase Difference</b>	180° ± 10°		
<b>Amplitude Difference (dB)</b>	2.5 max.		
<b>Power Capacity</b>	2 Watts max. (CW)		
<b>Operating Temperature</b>	-40 to +85°C		
<b>Storage Temperature Range</b>	-40 to +85°C		



\*18 months in vacuum sealed bag and 1 week after opened. Please keep unused parts in vacuum sealed bags.

For more info like handling and soldering profile, go to: [www.johansontechnology.com/silverleads-profile.html](http://www.johansontechnology.com/silverleads-profile.html)

## Mechanical Dimensions

	In	mm	
<b>L</b>	0.026 ± 0.002	0.65 ± 0.05	<p>Top View      Side View</p>
<b>W</b>	0.020 ± 0.002	0.50 ± 0.05	
<b>T</b>	0.018 max.	0.45 max.	<p>Bottom View      Side View</p>
<b>a</b>	0.008 +0.004/-0.002	0.20 +0.1/-0.05	
<b>b</b>	0.010 +0.004/-0.002	0.25 +0.1/-0.05	
<b>c</b>	0.004 +0.004/-0.002	0.10 +0.1/-0.05	

## Terminal Configuration

No	Function	No	Function
1	GND	3	Balanced Port
2	Unbalanced Port	4	Balanced Port

Top View

<b>P/N Suffix</b>	<b>Packing Style</b>	Bulk	Suffix = S	eg. 2450BL05A0100S
		T & R	Suffix = T	eg. 2450BL05A0100T
	<b>Evaluation Board</b>	2450BL05A0100-EB1SMA (3 Female SMA connector on a 50Ω PCB)		

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# High Frequency Ceramic Solutions

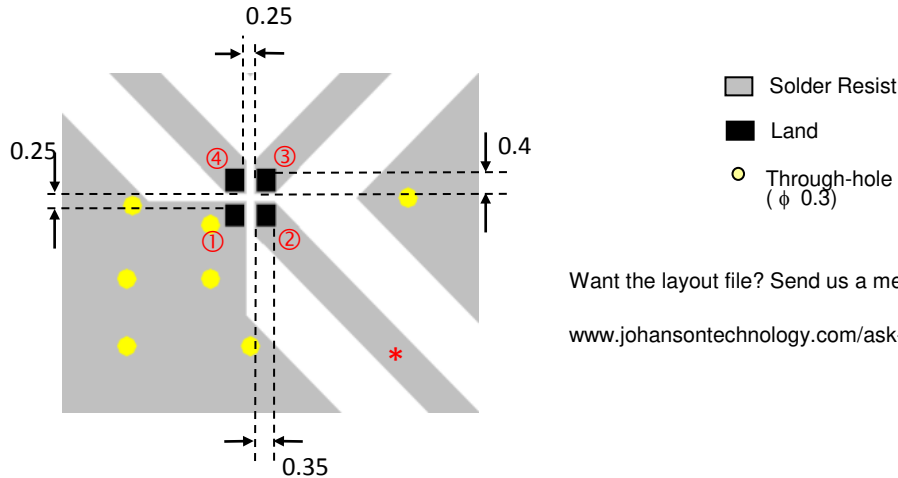
**2.4GHz EIA 0202 Micro Balun 1:2 impedance for BLE/WiFi/LTE/Cellular P/N 2450BL05A0100**

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## Recommended PC Board Pattern

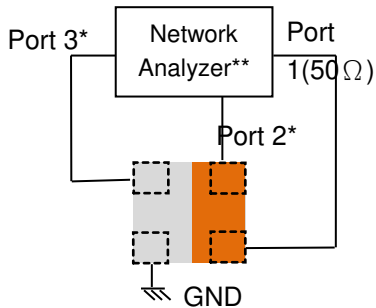
This micro balun fits well with differential feedlines that have a very small pitch.



Want the layout file? Send us a message at:  
[www.johansontechnology.com/ask-a-question](http://www.johansontechnology.com/ask-a-question)

\* 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=Sds21  
 RL=Sss11  
 Amp\_balance = dB(S(2,1)/S(3,1))  
 Phase\_balance = Phase(S(2,1)/S(3,1))

\*Impedance for ports 2 and 3 = Balanced Impedance/2  
 \*\*E5071B from Agilent

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# High Frequency Ceramic Solutions

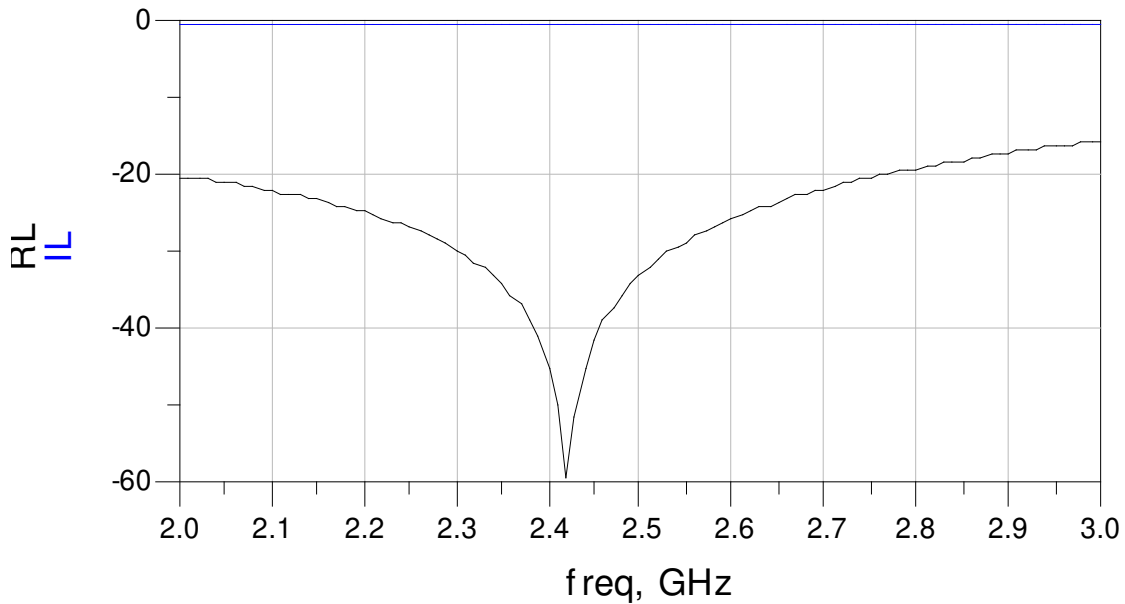
2.4GHz EIA 0202 Micro Balun 1:2 impedance for BLE/WiFi/LTE/Cellular P/N 2450BL05A0100

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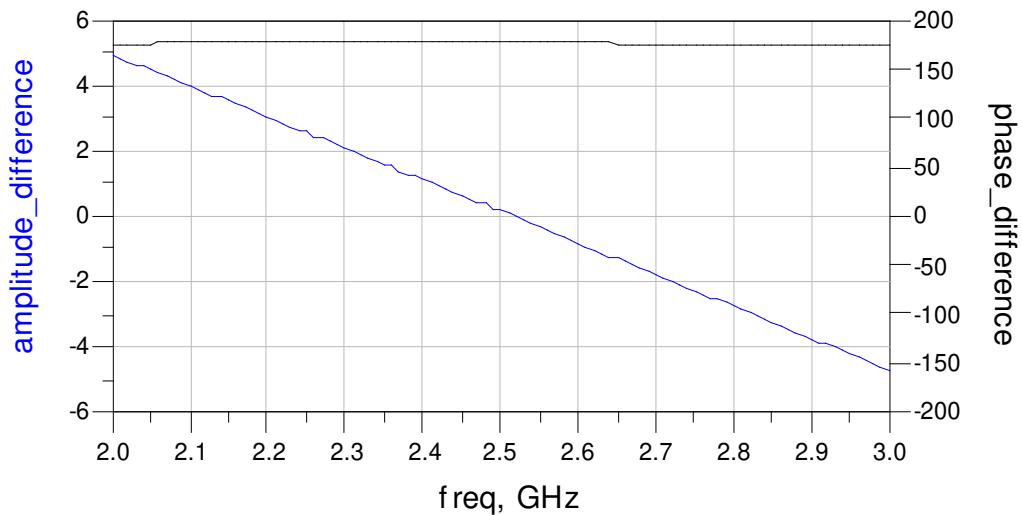
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## Typical Electrical Characteristics (T=25°C)

### Insertion and Return Loss



### Amplitude and Phase Balance



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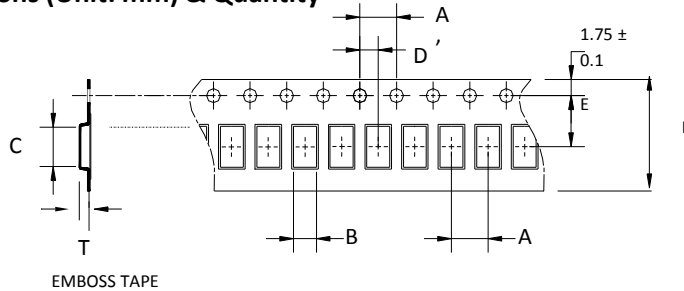
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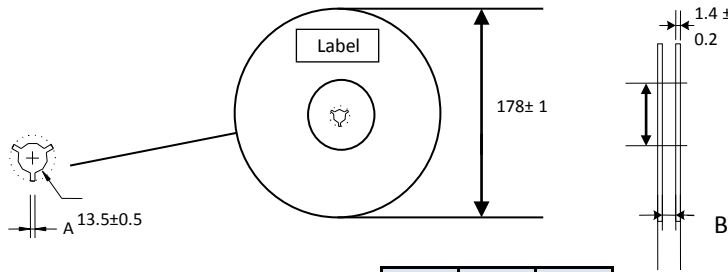
## Taping Specifications

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



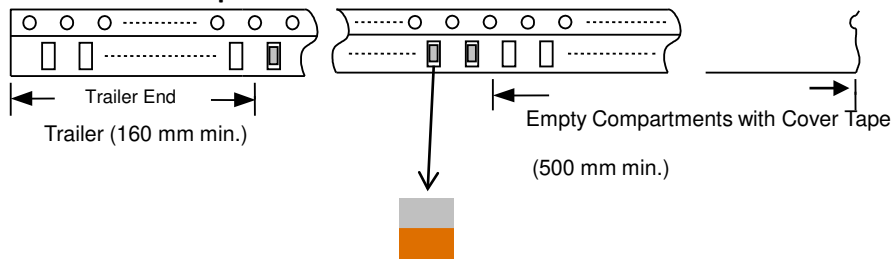
Type	A	A'	B	C	D	E	F	T	Quantity/reel	Tape material
0202	2± 0.05	4.0± 0.1	0.58± 0.03	0.78± 0.03	2.0± 0.05	3.5± 0.05	8.0± 0.2	0.48± 0.03	10,000pcs	Paper

### ❖ Reel Dimensions (Unit: mm)



Type	A	B
0202	2.3±0.5	9.0±0.3

### ❖ Leader and Trailer Tape



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## More Baluns

[www.johansontechnology.com/baluns](http://www.johansontechnology.com/baluns)

## RoHS Compliance

[www.johansontechnology.com/technical-notes/rohs-compliance.html](http://www.johansontechnology.com/technical-notes/rohs-compliance.html)

## Packaging information

[www.johansontechnology.com/ipcpackaging.html](http://www.johansontechnology.com/ipcpackaging.html)

## Soldering Information (i.e. recommended profile)

[www.johansontechnology.com/ipcsoldering-profile](http://www.johansontechnology.com/ipcsoldering-profile)

## Layout Files, s-parameters and any other technical questions

[www.johansontechnology.com/ask-a-question](http://www.johansontechnology.com/ask-a-question)

## MSL Info

[www.johansontechnology.com/technical-notes/msl-rating.html](http://www.johansontechnology.com/technical-notes/msl-rating.html)

## Recommended Storage Condition and Max Shelf Life

[www.johansontechnology.com/ipcstorage-shelflife](http://www.johansontechnology.com/ipcstorage-shelflife)

## Antenna layout and tuning techniques

[www.johansontechnology.com/tuning](http://www.johansontechnology.com/tuning)

## Antenna layout review, tuning, and characterization services

[www.johansontechnology.com/ipcantennaservices](http://www.johansontechnology.com/ipcantennaservices)

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