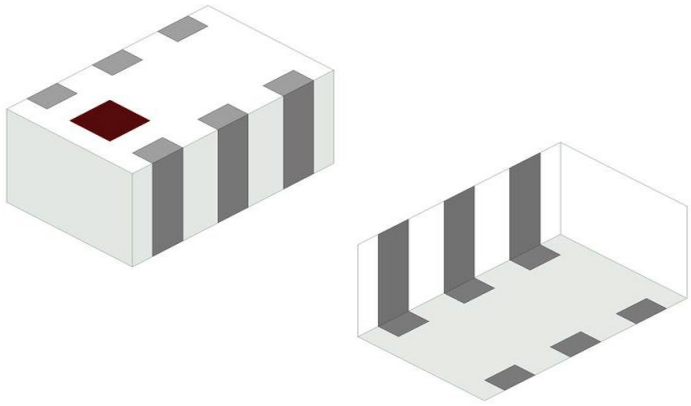
2.4 – 2.5 GHz RF Balun

- 1:2 Impedance
- SMD, EIA 0805
- Applications include Bluetooth, WiFi, Zigbee



General Specifications[1][2]

Passband Frequency (MHz)	**2400 – 2500**
Unbalanced Impedance (Ω)	50
Balanced Impedance (Ω)	100
Insertion Loss (dB)	1.0 Max.
Return Loss (dB)	9.5 Min.
Phase Difference (Degree)	180 ± 10
Amplitude Difference (dB)	2.0 Max.

Maximum Ratings

Power Capacity (W)	2 Max. (CW)
Operating Temperature (°C)	-40 to +85
Recommended Storage Conditions post-installation (°C)	-40 to +85
Recommended Storage Conditions and Period for Unused T&R Product	45% - 75% RH +5 to +35 °C 18 Months Max.

[1] Typical value represents average measurement at 25°C. Min./Max. values represent measurements within the operating temperature specification unless stated otherwise.
[2] General specifications measured on Johanson's evaluation board P/N 2450BL15B0100001CE1.

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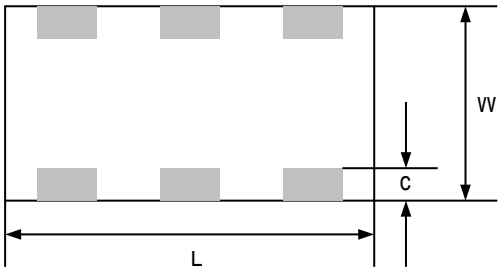
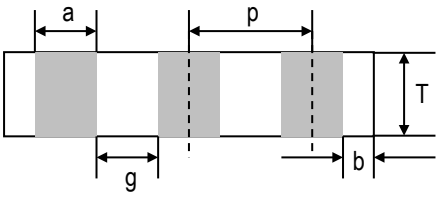
Mechanical Dimensions

	Inches			Millimeters		
L	0.079	±	0.004	2.00	±	0.10
W	0.049	±	0.004	1.25	±	0.10
T	0.037	±	0.004	0.95	±	0.10
a	0.012	±	0.004	0.30	±	0.10
b	0.008	±	0.004	0.20	±	0.10
c	0.012	+0.004/-0.006		0.30	+0.10/-0.20	
g	0.014	±	0.004	0.35	±	0.10
p	0.026	±	0.002	0.65	±	0.05

Bottom view



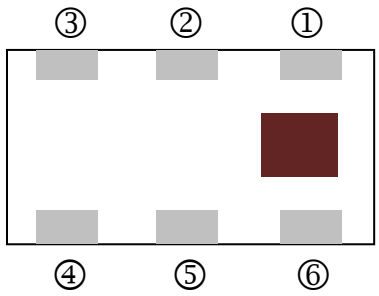
Side view



Terminal Configuration

Pin Number	Function
1	Unbalanced Port
2	GND or DC feed + RF GND
3	Balanced Port
4	Balanced Port
5	GND
6	NC

Top view



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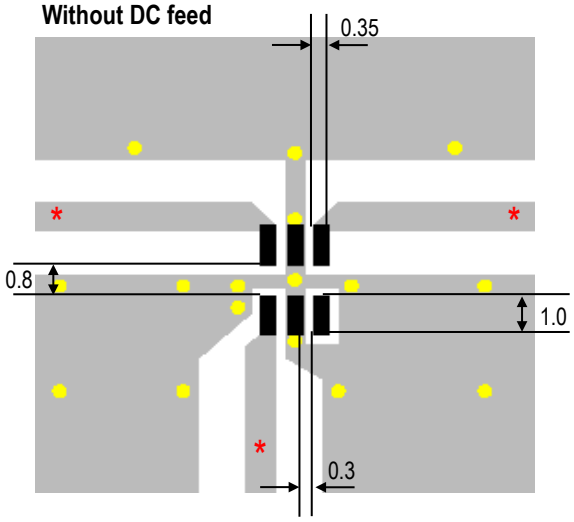
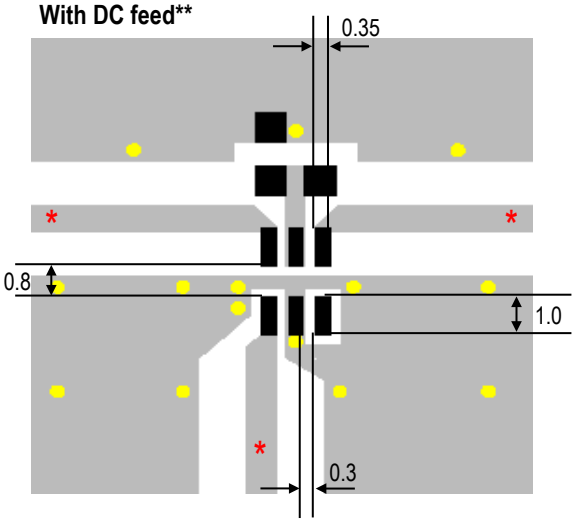
Evaluation Board and Recommended Mounting Configuration (P/N 2450BL15B0100001CE1)

Note: Mount device with colored mark facing up.

Without DC feed



With DC feed**



**By-pass capacitor should be connected when feeding DC power.

Units: mm

Solder Resist

Land

Through-hole (*f* 0.3)

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

If you would like the full reference design package or have any questions, contact our application engineers at https://www.johansontechnology.com/ask-a-question

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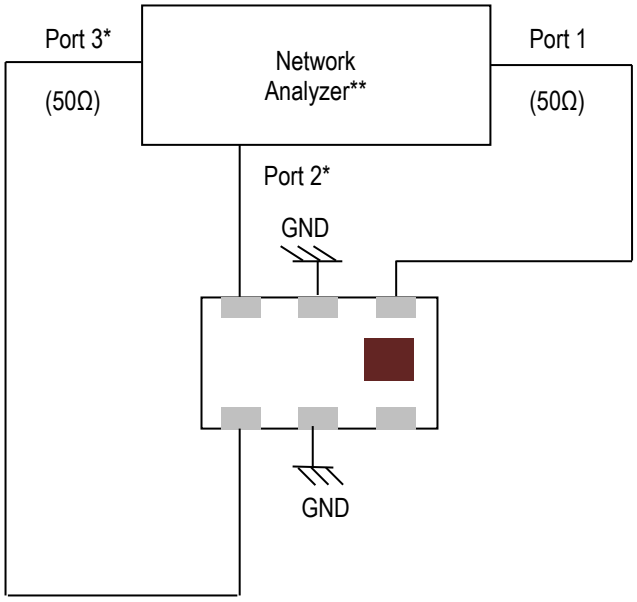
Measuring Diagram



Port 1:Unbalanced Port

Ports 2 and 3: Balanced Port

$IL=S_{ds21}$

$RL=S_{ss11}$

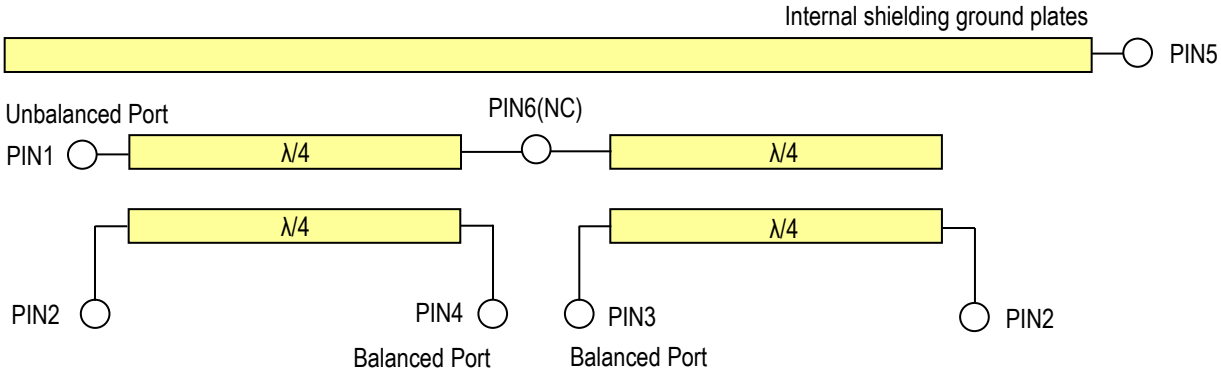
Amplitude balance = dB(S(2,1)/S(3,1))

Phase balance = Phase(S(2,1)/S(3,1))

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

**E5071B from Agilent

Internal Equivalent Circuit



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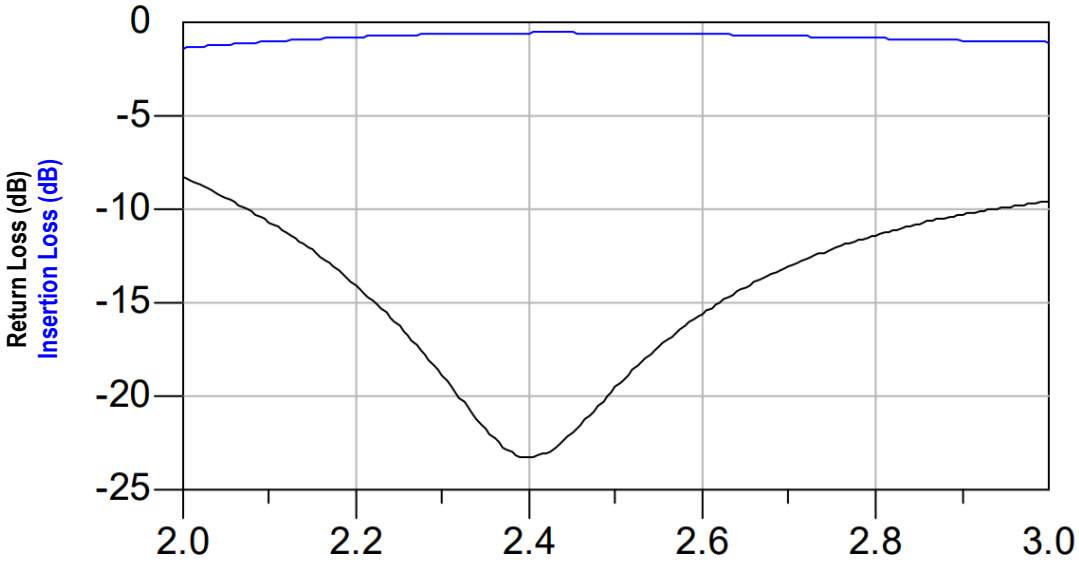
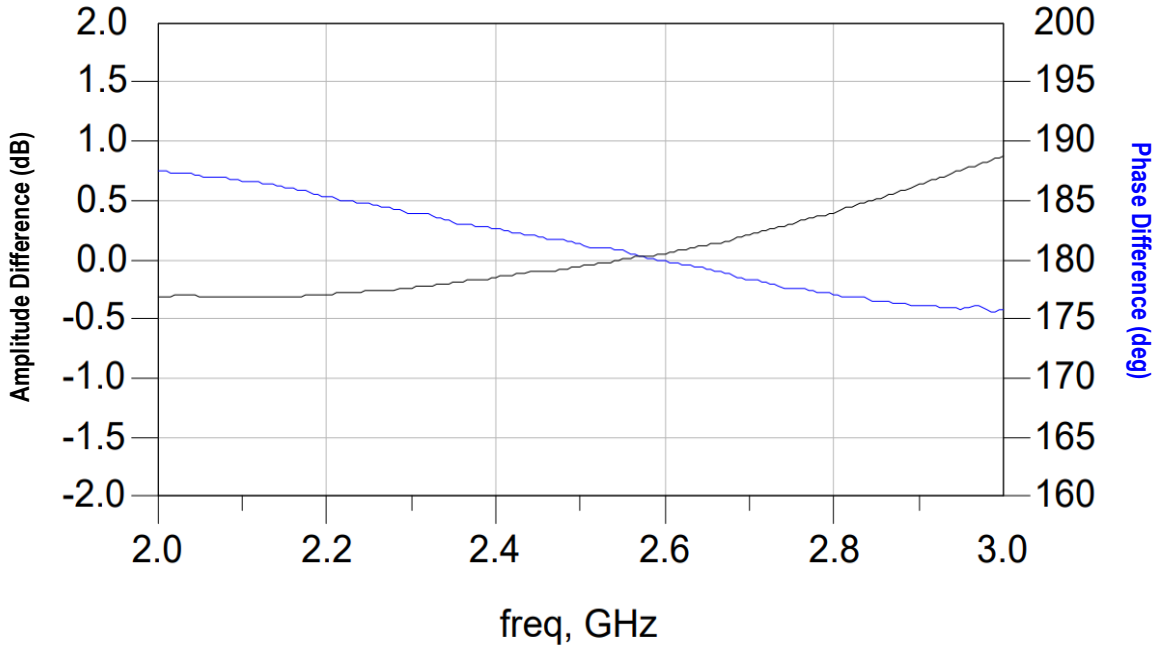
RF Measurement

Insertion Loss, Return Loss



Phase Difference, Amplitude Difference



S-parameter and layout files available upon request. Please contact https://www.johansontechnology.com/ask-a-question

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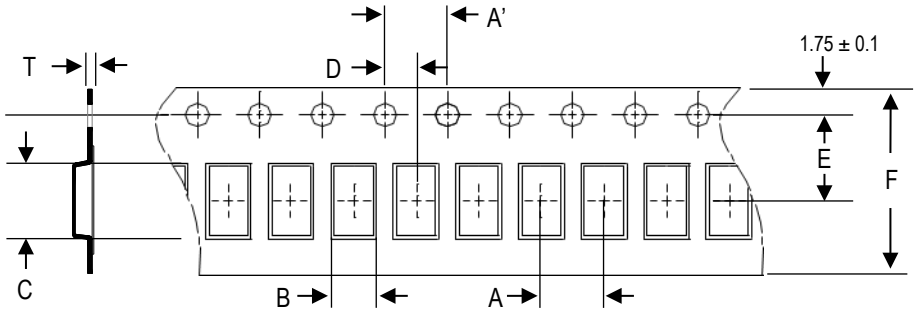
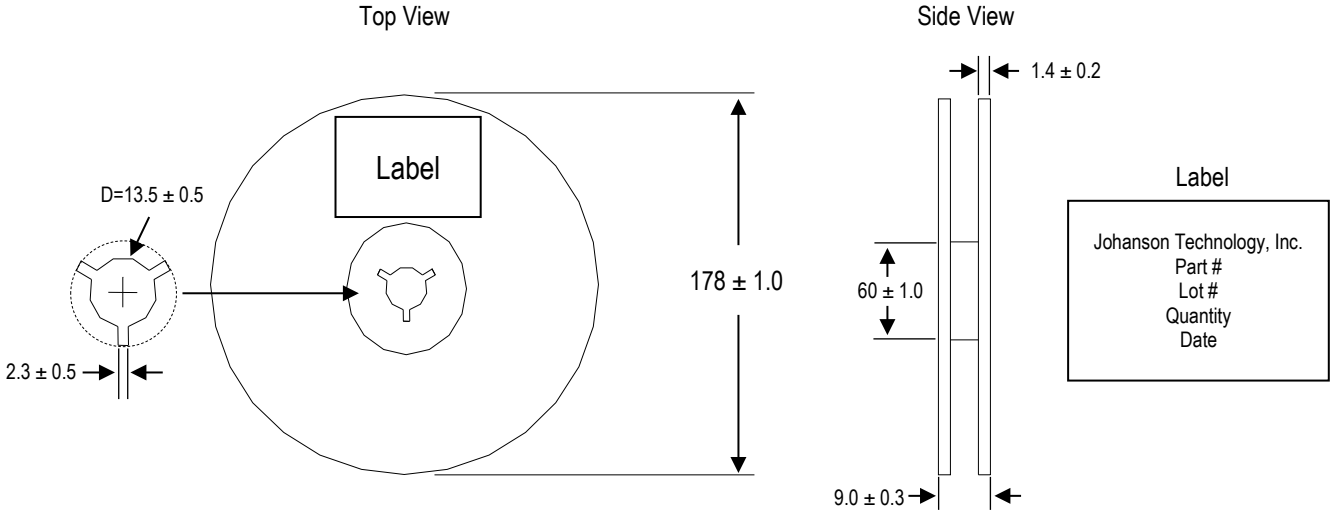
Tape and Reel Specification (Units in mm)

Tape Dimensions

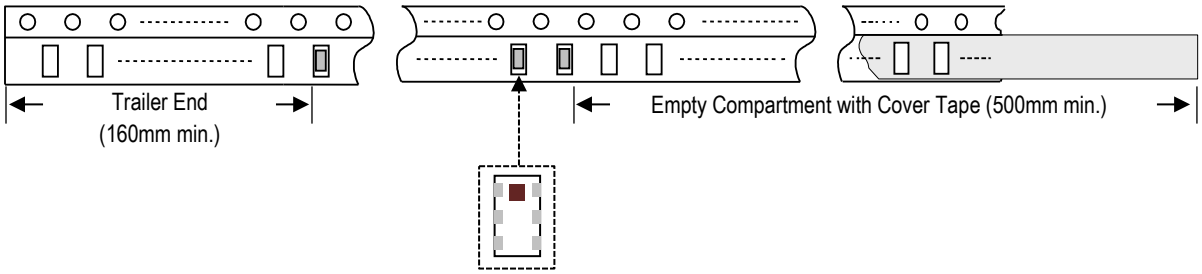


A	A'	B	C	D	E	F	T	Quantity/reel	Tape material
4.0±0.1	4.0±0.1	1.35±0.05	2.15±0.05	2.0±0.05	3.5±0.1	8.0±0.1	1.08±0.05	4,000pcs	Plastic (Embossed)

Reel Dimensions



Leader and Trailer Dimensions



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Orderable Part Number

Packaging Style	Part Number
Bulk (loose pcs.)	2450BL15B0100001B
T & R (7" Reel Plastic Tape)	2450BL15B0100001E (Qty: 4,000 pcs./reel)
Evaluation Board with 3 SMA Connectors	2450BL15B0100001CE1

Important Links

2450BL15B0100001E Product Page

More RF Baluns

Sub-GHz and 2.4GHz Chip Antennas

Antenna Tuning, Optimization, and Validation Services

Soldering Information

MSL Information

Packaging Information

Recommended Storage Condition and Max Shelf Life

RoHS Compliance

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