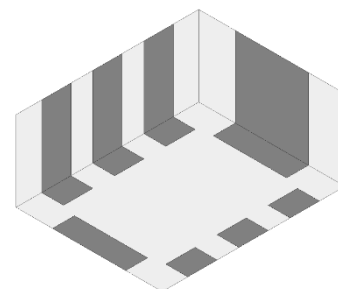
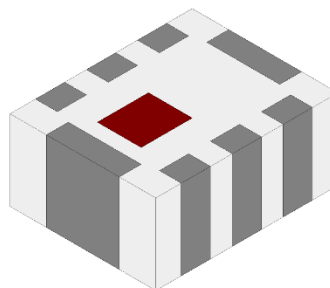




2.45 GHz Balun / Filter Combination

- 2400 - 2500 MHz passband
- For WLAN, Home RF, Bluetooth, etc.
- SMD, EIA 1008
- RoHS compliant



General Specifications^{1 2}

Passband Frequency (MHz)	2400 - 2500
Unbalanced Impedance (Ω)	50
Balanced Impedance (Ω)	100
Insertion Loss (dB)	2.0 Max.
Return Loss (dB)	9.5 Min.
Phase Difference (Degree)	180 ± 10
Amplitude Difference (dB)	1.0 Max.
Attenuation	
Frequency Range (MHz)	880 – 960
Attenuation (dB)	35 Min.
Frequency Range (MHz)	1710 – 1910
Attenuation (dB)	30 Min.
Frequency Range (MHz)	4800 – 5000
Attenuation (dB)	32 Min.
Frequency Range (MHz)	7200 – 7500
Attenuation (dB)	25 Min.

¹ Typical value represents average measurement at 25°C. Min./Max. values represent measurements over specified operating temperature.

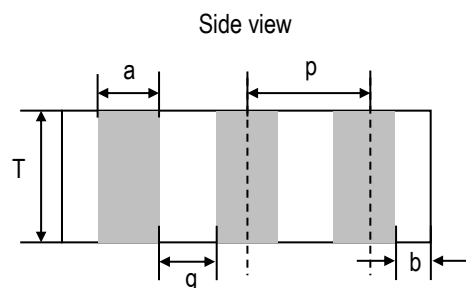
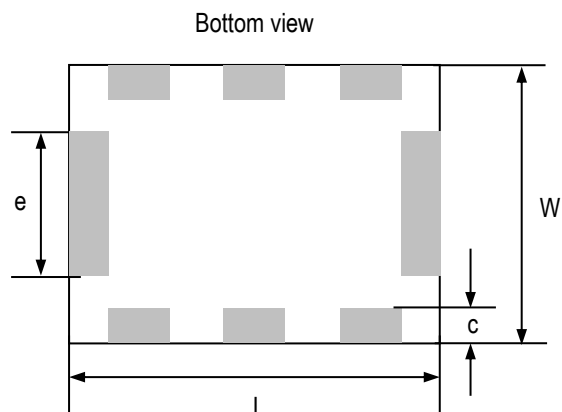
² General specifications measured on Johanson's evaluation board PN 2450FB39B0100001CE1.

Maximum Ratings

Power Capacity (W)	1 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.

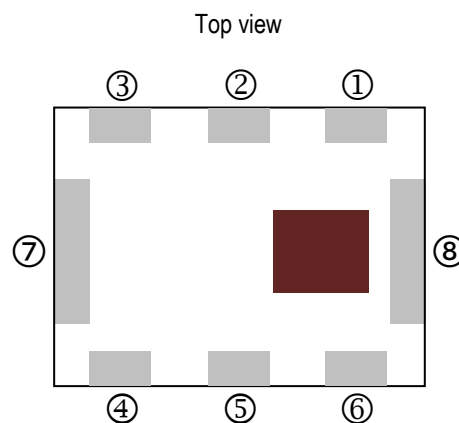
Mechanical Dimensions

	Inches			Millimeters		
L	0.098	±	0.008	2.50	±	0.20
W	0.079	±	0.008	2.00	±	0.20
T	0.043	±	0.004	1.10	±	0.10
a	0.016	±	0.004	0.40	±	0.10
b	0.014	±	0.004	0.35	±	0.10
c	0.012		+0.004/-0.008	0.30		+0.1/-0.2
e	0.039	±	0.004	1.00	±	0.10
g	0.012	±	0.004	0.30	±	0.10
p	0.028	±	0.004	0.70	±	0.10



Terminal Configuration³

Pin Number	Function
1	NC
2	Unbalanced Port
3	NC or DC Feed Port
4	Balanced Port
5	NC
6	Balanced Port
7	GND
8	GND

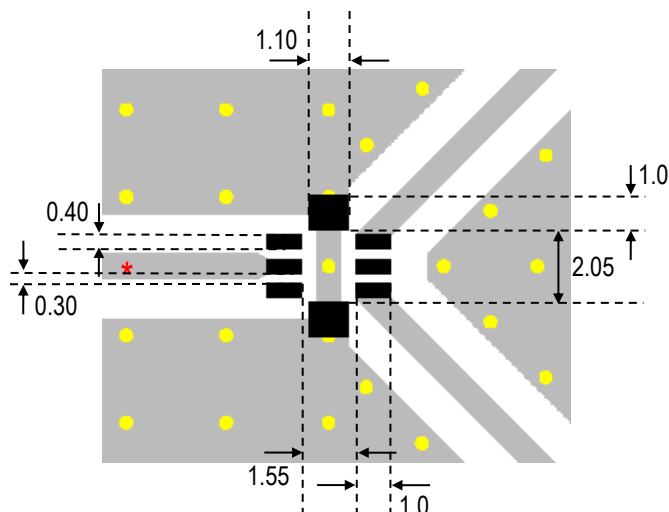


³ The termination type is Nickel Tin. Go to: <https://www.johansontechnology.com/tech-notes/typical-soldering-profile-ipc> for Typical Soldering Profile.

Recommended PCB Layout

Note: Mount device with colored mark facing up.

Without DC feed



Units: mm

 Solder Resist

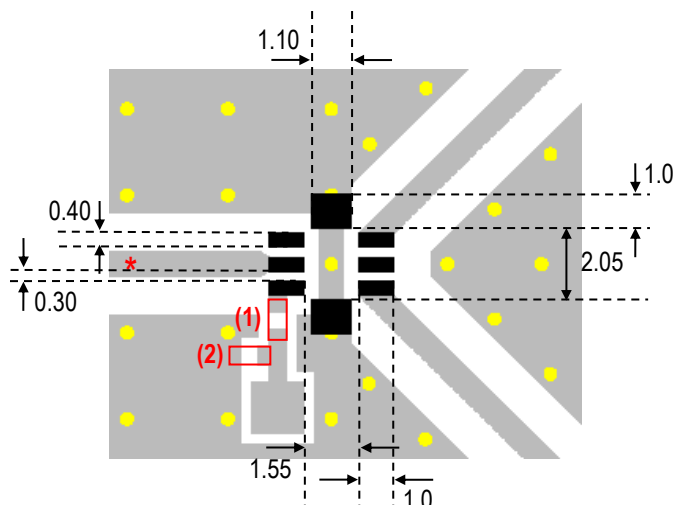
 Land

 Through-hole ($\phi 0.3$)

 (1) Choke Inductor = 8.2nH

(2) Decoupling Capacitor = 100pF

With DC feed

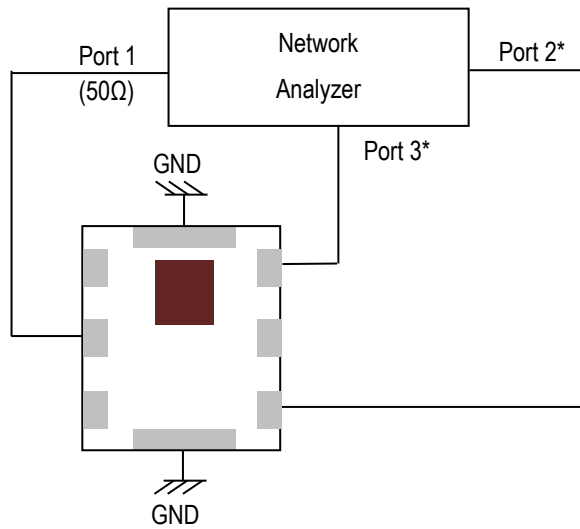


*Transmission line width should be designed to match 50 Ω characteristic impedance, depending on PCB material and thickness.

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>



Measuring Diagram



Port 1: Unbalanced Port

Ports 2 and 3: Balanced Port

$$IL = S_{ds21}$$

$$RL = S_{ss11}$$

$$\text{Amplitude balance} = \text{dB}(S(2,1)/S(3,1))$$

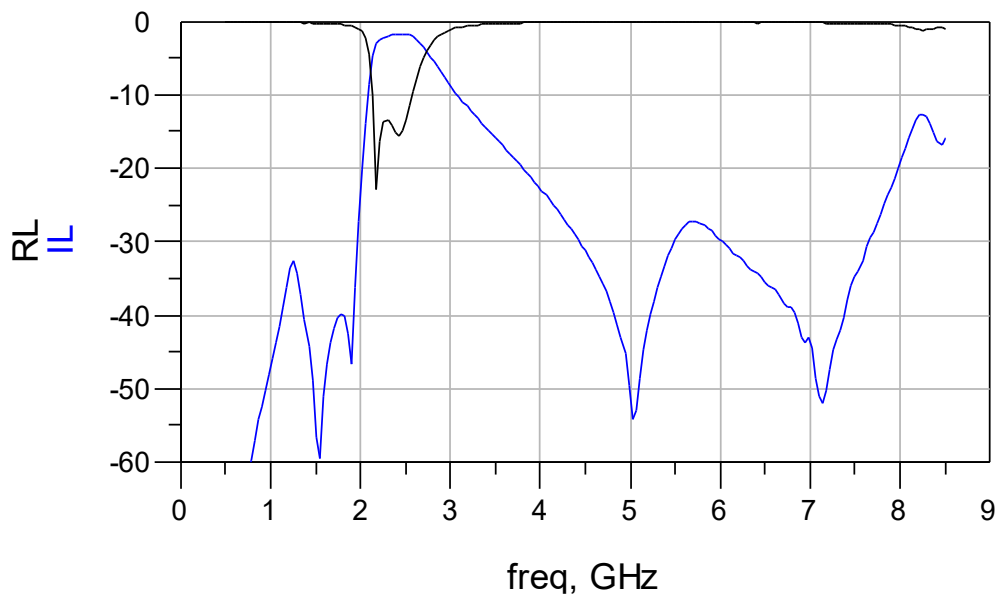
$$\text{Phase balance} = \text{Phase}(S(2,1)/S(3,1))$$

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

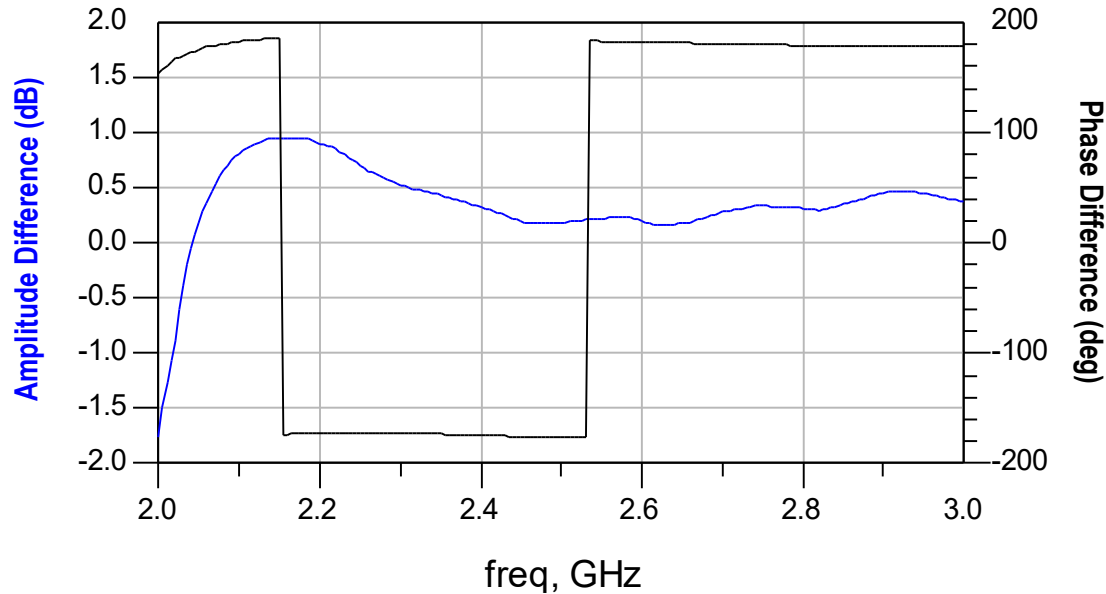


RF Measurement (T=25°C)

Insertion Loss, Return Loss



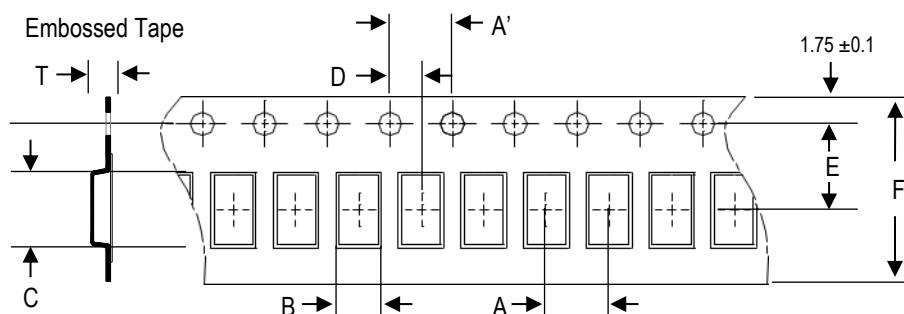
Phase Difference, Amplitude Difference



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

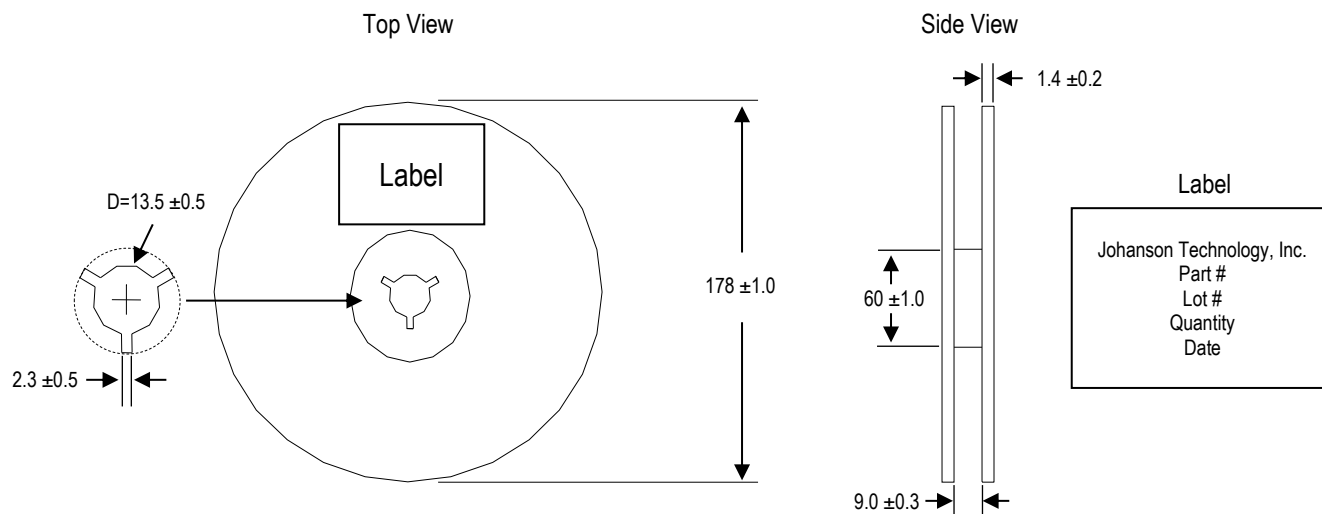
Tape and Reel Specification (Units in mm)

Tape Dimensions

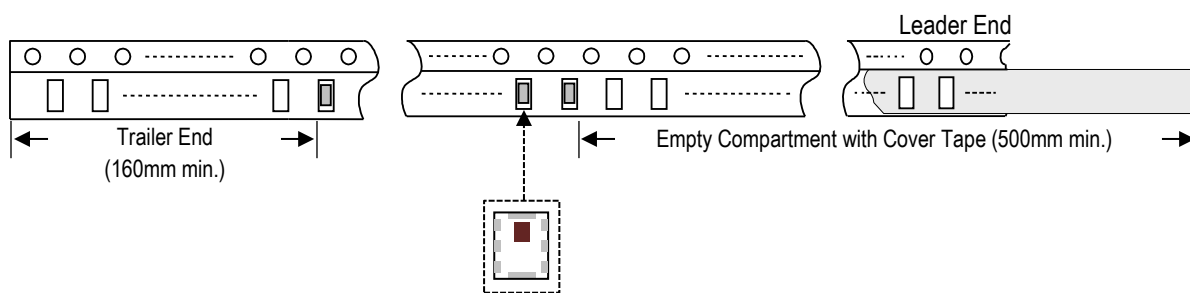


A	A'	B	C	D	E	F	T	Quantity/reel	Tape material
4.0 ± 0.1	4.0 ± 0.1	2.45 ± 0.1	2.95 ± 0.1	2.0 ± 0.1	3.5 ± 0.1	8.0 ± 0.1	1.45 ± 0.05	3,000 pcs	Plastic (Embossed)

Reel Dimensions



Leader and Trailer Dimensions



Orderable Part Number

Packaging Style	Part Number	Termination
Bulk (loose pcs.)	2450FB39B0100001B	Nickel Tin
T & R (7" Reel Embossed Tape)	2450FB39B0100001E (Qty: 3,000 pcs/reel)	
Evaluation Board with 3 SMA Connectors	2450FB39B0100001CE1 (Without DC feed)	

Important Links

[2450FB39B0100001E Product Page](#)

[More Balun-Filter Combinations](#)

[Antenna Tuning, Optimization, and Validation Services](#)

[Soldering Information](#)

[MSL Information](#)

[Packaging Information](#)

[Recommended Storage Condition and Max Shelf Life](#)

[RoHS Compliance](#)

Contact our application engineers for a PCB layout review.

Johanson Technology, Inc. reserves the right to make design changes without notice.

All sales are subject to Johanson Technology, Inc. terms and conditions.