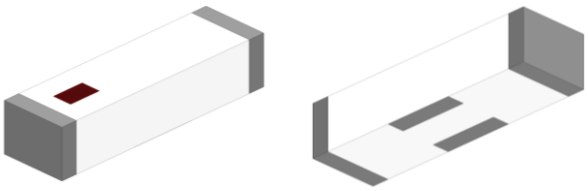
2.45 GHz RF Chip Antenna

- 2.4 – 2.5 GHz pass band
- Bluetooth, WLAN
- SMD, 5.0x2.0x1.1mm (LxWxT)
- Corner mount
- RoHS compliant

Johanson Technology, Inc. (JTI) miniature RF ceramic chip antennas are made using Low Temperature Co-fired Ceramic (LTCC) technology which has the ability to embed low and high dielectric constants inside our antenna. This enables our components to have high detuning resilience and stability over extreme temperatures (~2ppm).



Recommended mounting locations for this antenna

PCB Corner



General Specifications[1] [2]

Passband Frequency (MHz)	**2400 - 2500**
Impedance (Ω)	50
Return Loss (dB)	9.5 Min.
Peak Gain (dBi)	1.2 Typ.
Average Gain (dBi)	-0.6 Typ.
Average Radiated Efficiency (%)	55

Maximum Ratings

Power Capacity (W)	3 Max. (CW)
Operating Temperature (°C)	-40 to +125
Recommended Storage Conditions post-installation (°C)	-40 to +125
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 over specified operating temperature.

[2] General specifications measured on Johanson's evaluation board P/N 2450AT42B0100001CE1.

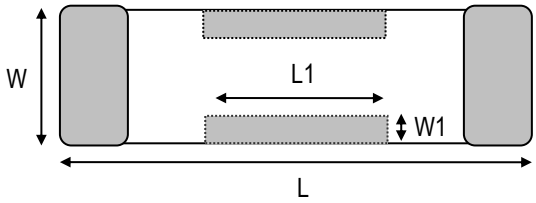
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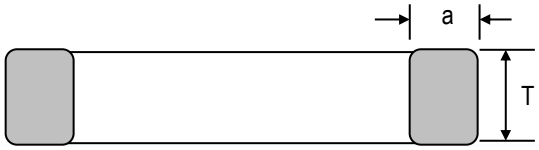
Mechanical Dimensions

	Inches			Millimeters		
L	0.197	±	0.008	5.00	±	0.20
W	0.079	±	0.008	2.00	±	0.20
T	0.079	+0.004/-0.008		2.00	+0.1/-0.2	
L1	0.102	±	0.008	2.60	±	0.20
W1	0.020	±	0.008	0.50	±	0.20
a	0.020	±	0.012	0.50	±	0.30

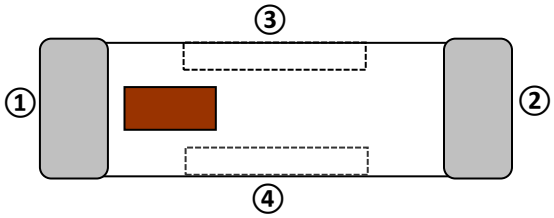
Bottom view



Side view



Top view



Terminal Configuration[3]

Pin Number	Function
1	Feed
2	NC*
3	NC*
4	NC*

[3] The termination type is Nickel Tin. Go to: https://www.johansontechnology.com/ipcsoldering-profile for Typical Soldering Profile.

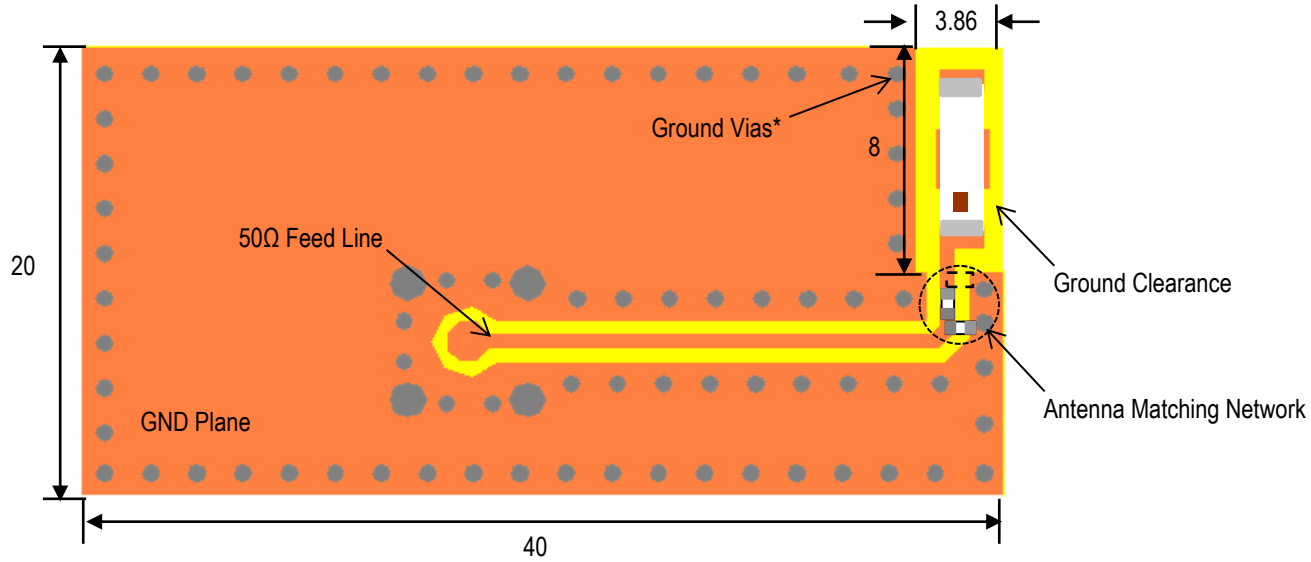
* This terminal must be soldered for anchoring and mechanical stability.

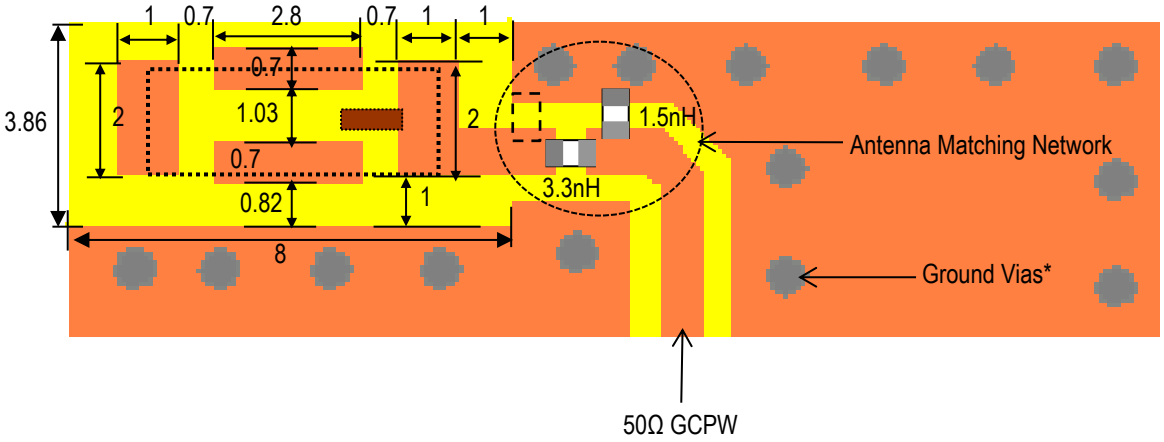
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Evaluation Board and Recommended Mounting Configuration (P/N 2450AT42B0100001CE1)

All units in mm





JTI P/N's for Matching Network[4]
Inductor (3.3nH): LRC0402CS3N3GV001T
Inductor (1.5nH): LRC0402CS1N5GV001T

*Note: Ground Vias are highly recommended to have better antenna efficiency.

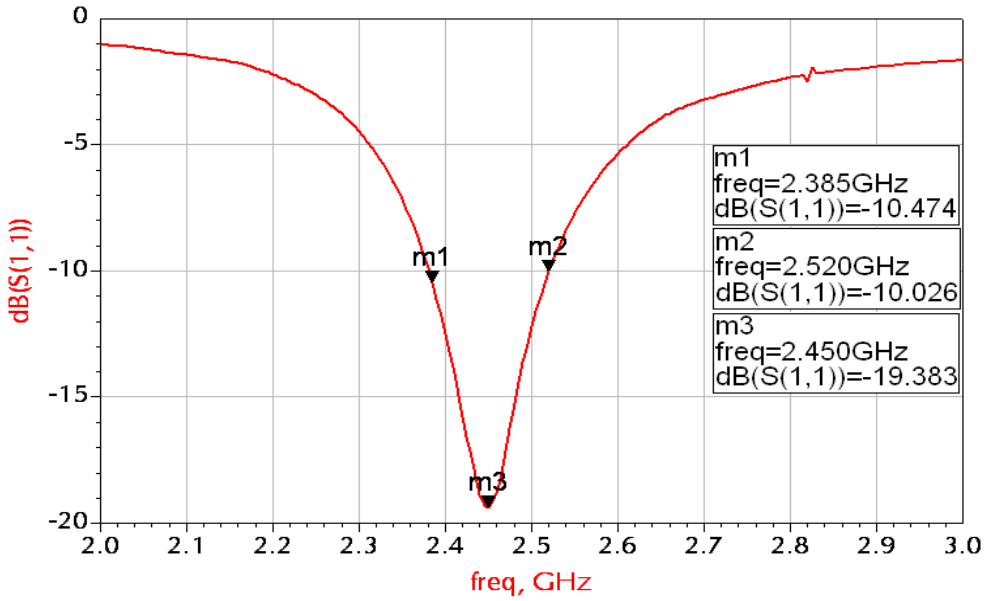
If you'd like the CAD PCB layout or have any questions,
contact our application engineers at https://www.johansontechnology.com/ask-a-question

[4] It is recommended that the designer leave available slots for a "pi" (or shunt-series-shunt) network. The antenna matching network values above are used when antenna is mounted on Johanson's evaluation board. The matching values on client's PCB will be different, depending on the layout, thickness, material, etc. Go to: https://www.johansontechnology.com/tuning and see how to obtain the new values.

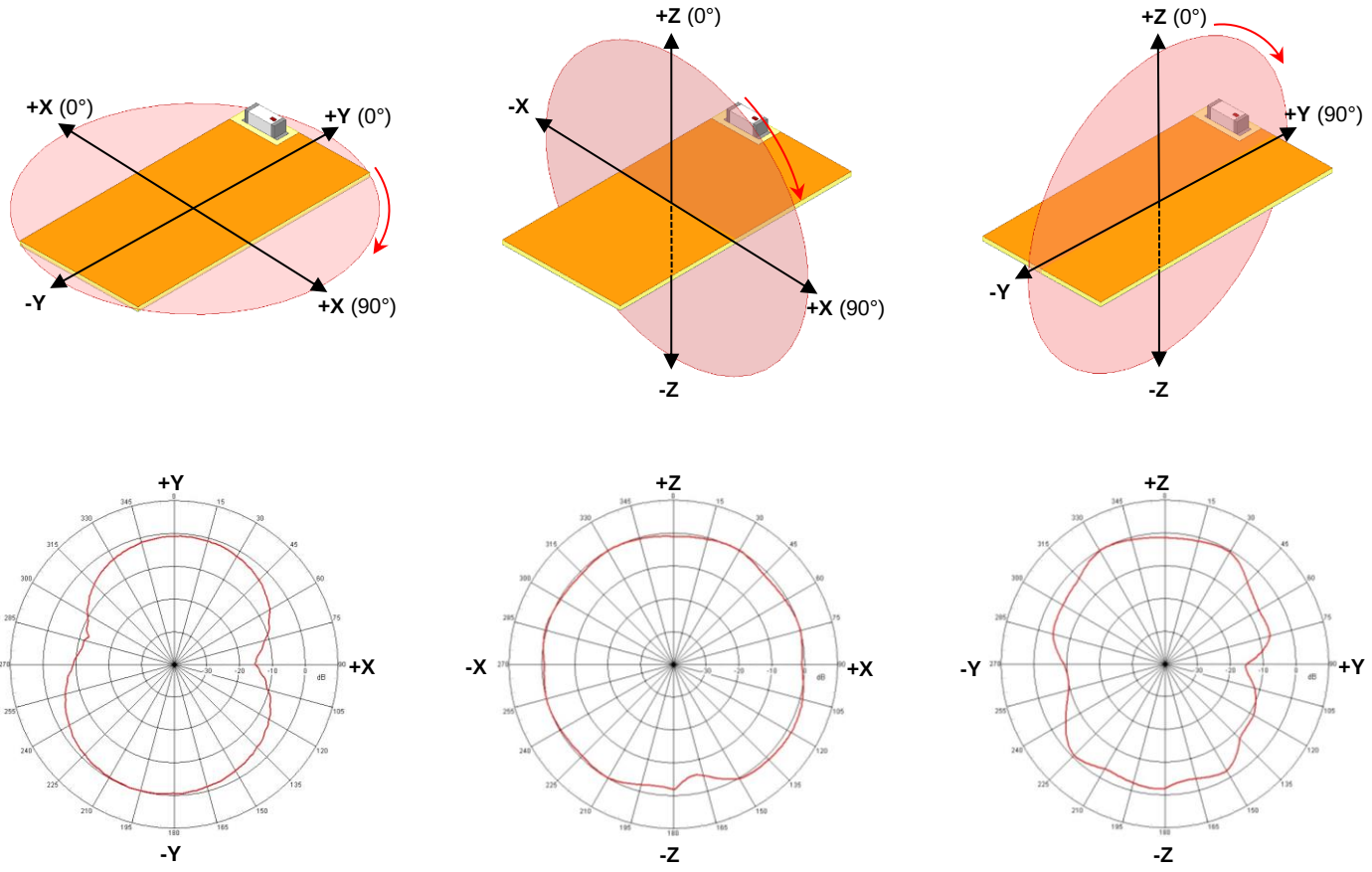
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Evaluation Board Typical Return Loss Measurement (P/N 2450AT42B0100001CE1)



Evaluation Board Typical 2D Radiation Patterns @2450MHz (P/N 2450AT42B0100001CE1)

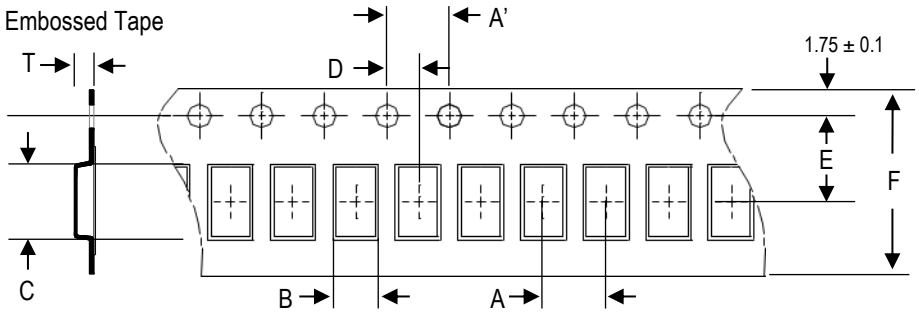


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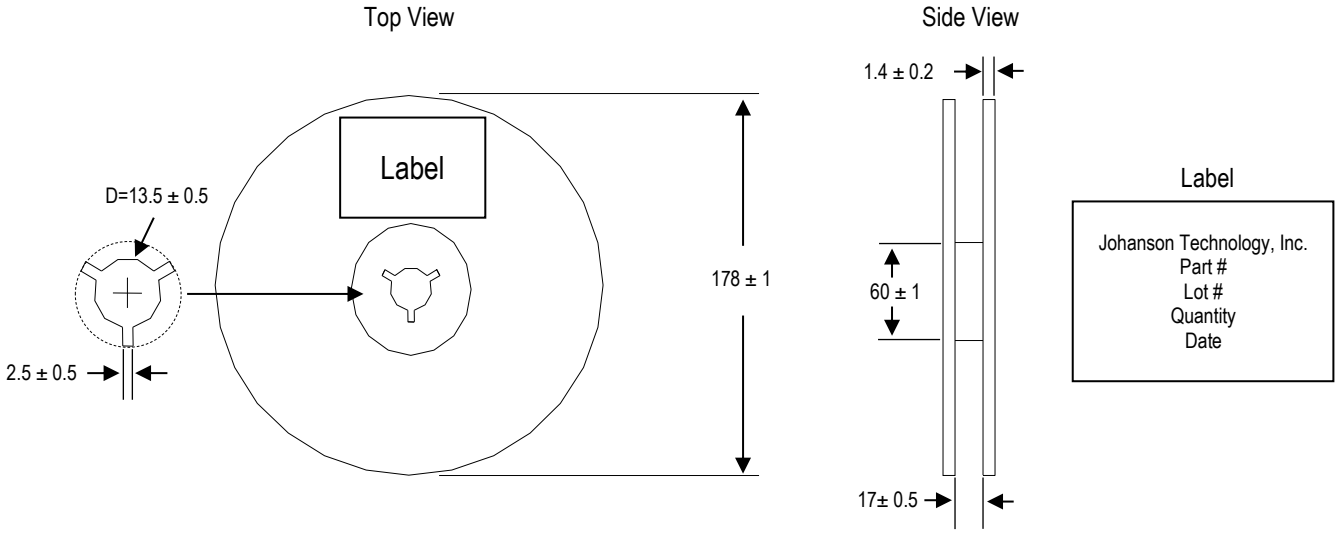
Tape and Reel Specification (Units in mm)

Tape Dimensions

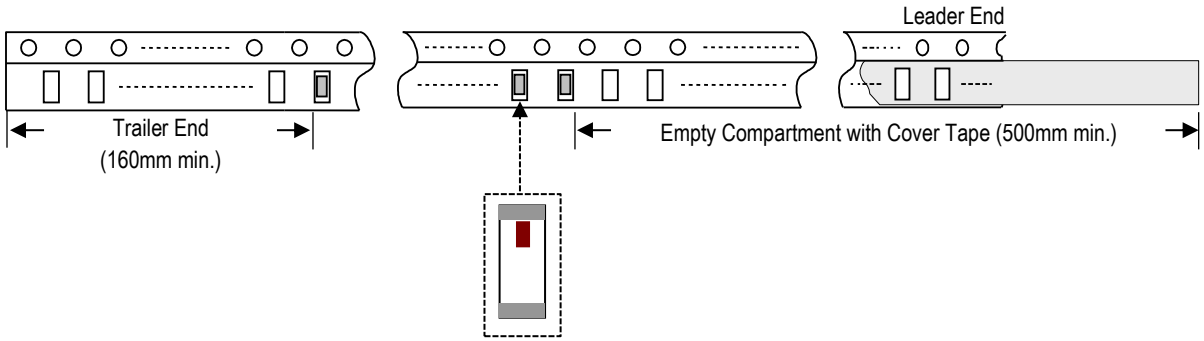


A	A'	B	C	D	E	F	T	Quantity/reel	Tape material
4.0±0.1	4.0±0.1	2.4±0.1	5.4±0.1	2.0±0.05	5.5±0.1	12.0±0.1	2.3±0.1	2,000pcs.	Plastic (Embossed)

Reel Dimensions



Leader and Trailer Dimensions



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Orderable Part Number

Packaging Style	Part Number	Termination
Bulk (loose pcs.)	2450AT42B0100001B	Nickel Tin
T & R (7" Reel Embossed Tape)	2450AT42B0100001E (Qty: 2,000 pcs./reel)	
Evaluation Board with 1 SMA Connector	2450AT42B0100001CE1	

Important Links

2450AT42B0100001E Product Page

More RF Chip Antennas

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.
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