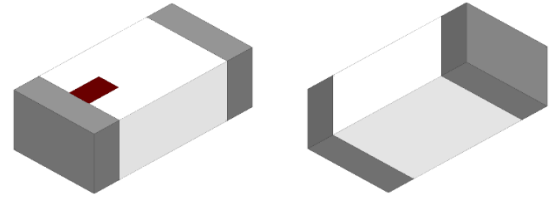
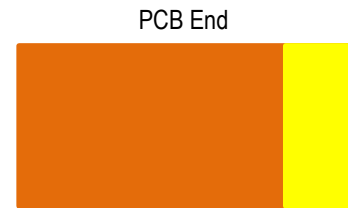


2.45 GHz RF Chip Antenna

- 2.4 – 2.5 GHz Operational frequency
- Bluetooth, WLAN
- SMD, 5.0x2.0x1.1mm (LxWxT)
- End mount
- RoHS compliant



Recommended mounting locations for this antenna



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).

General Specifications^{1 2}

| | |
|---------------------------------|-------------|
| Operational Frequency (MHz) | 2400 - 2500 |
| Impedance (Ω) | 50 |
| Return Loss (dB) | 9.5 Min. |
| Peak Gain (dBi) | 0.0 Typ. |
| Average Gain (dBi) | -1.0 Typ. |
| Average Radiated Efficiency (%) | 55 |

Maximum Ratings

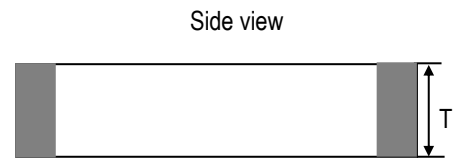
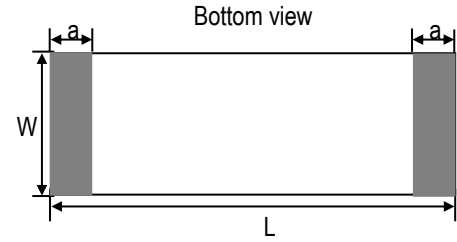
| | |
|-------------------------------------------------------------------------|----------------------------------------------------------------|
| Power Capacity (W) | 2 Max. (CW) |
| Operating Temperature ($^{\circ}\text{C}$) | -40 to +85 |
| Recommended Storage Conditions post-installation ($^{\circ}\text{C}$)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

¹ Typical value represents average measurement at 25 $^{\circ}\text{C}$. Min./Max. values represent measurements over specified operating temperature.

² General specifications measured on Johanson's evaluation board P/N 2450AT42A0100001CE1.

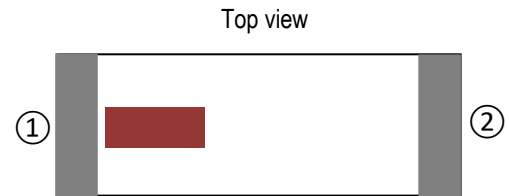
Mechanical Dimensions

| | Inches | | | Millimeters | | |
|----------|--------|---|-------|-------------|---|------|
| L | 0.197 | ± | 0.008 | 5.00 | ± | 0.20 |
| W | 0.079 | ± | 0.008 | 2.00 | ± | 0.20 |
| T | 0.043 | ± | 0.008 | 1.10 | ± | 0.20 |
| a | 0.020 | ± | 0.012 | 0.50 | ± | 0.30 |



Terminal Configuration³

| Pin Number | Function |
|------------|----------|
| 1 | Feed |
| 2 | NC* |

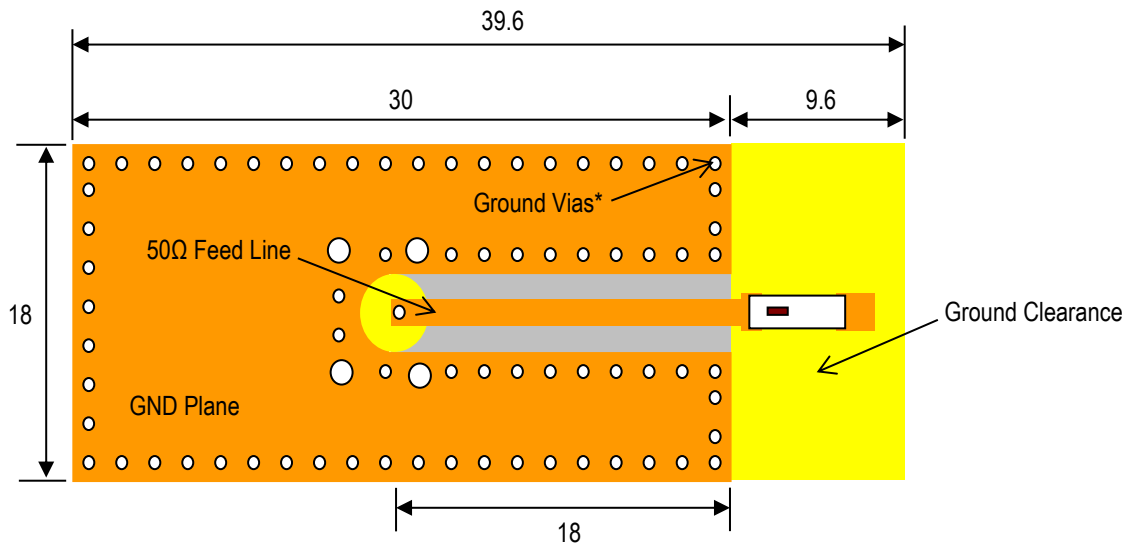


³ The termination type is Nickel Tin. Go to: <https://www.johansontechnology.com/ipcsoldering-profile> for Typical Soldering Profile.

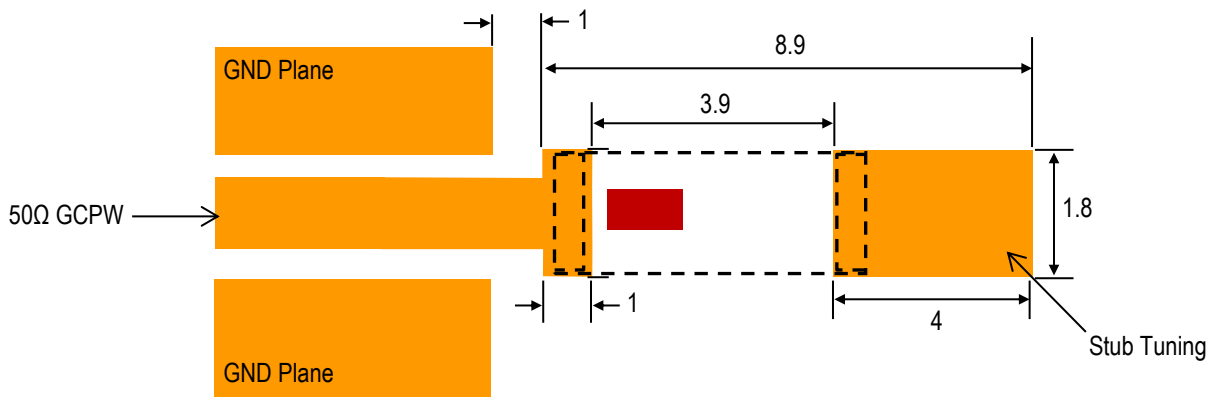
* This terminal must be soldered for anchoring and mechanical stability.

Evaluation Board and Recommended Mounting Configuration (P/N 2450AT42A0100001CE1)

All units in mm



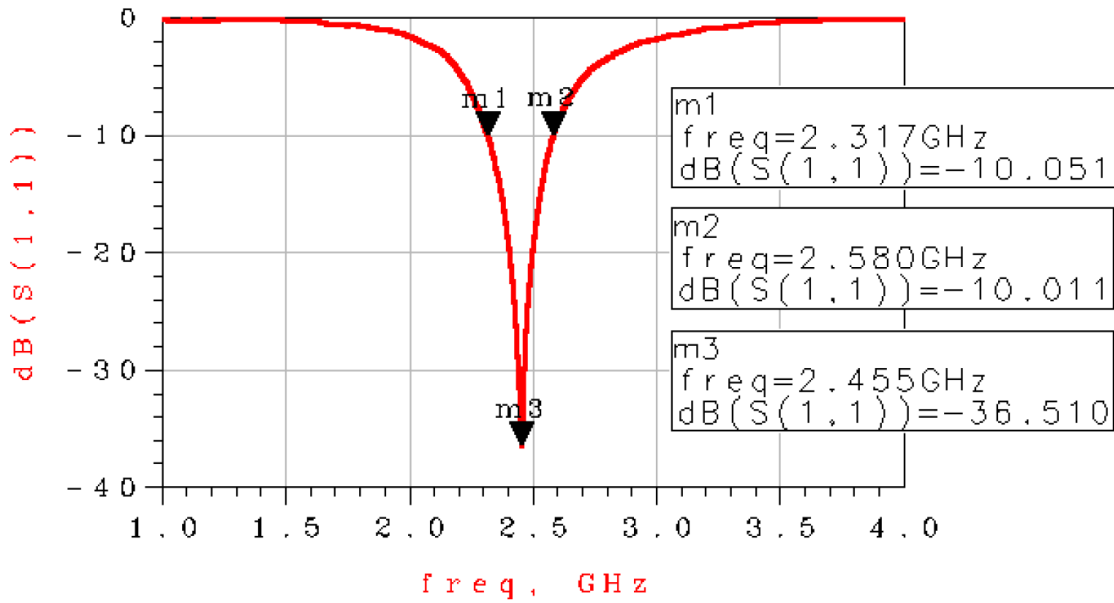
*Note: Ground Vias are highly recommended to have better antenna efficiency.



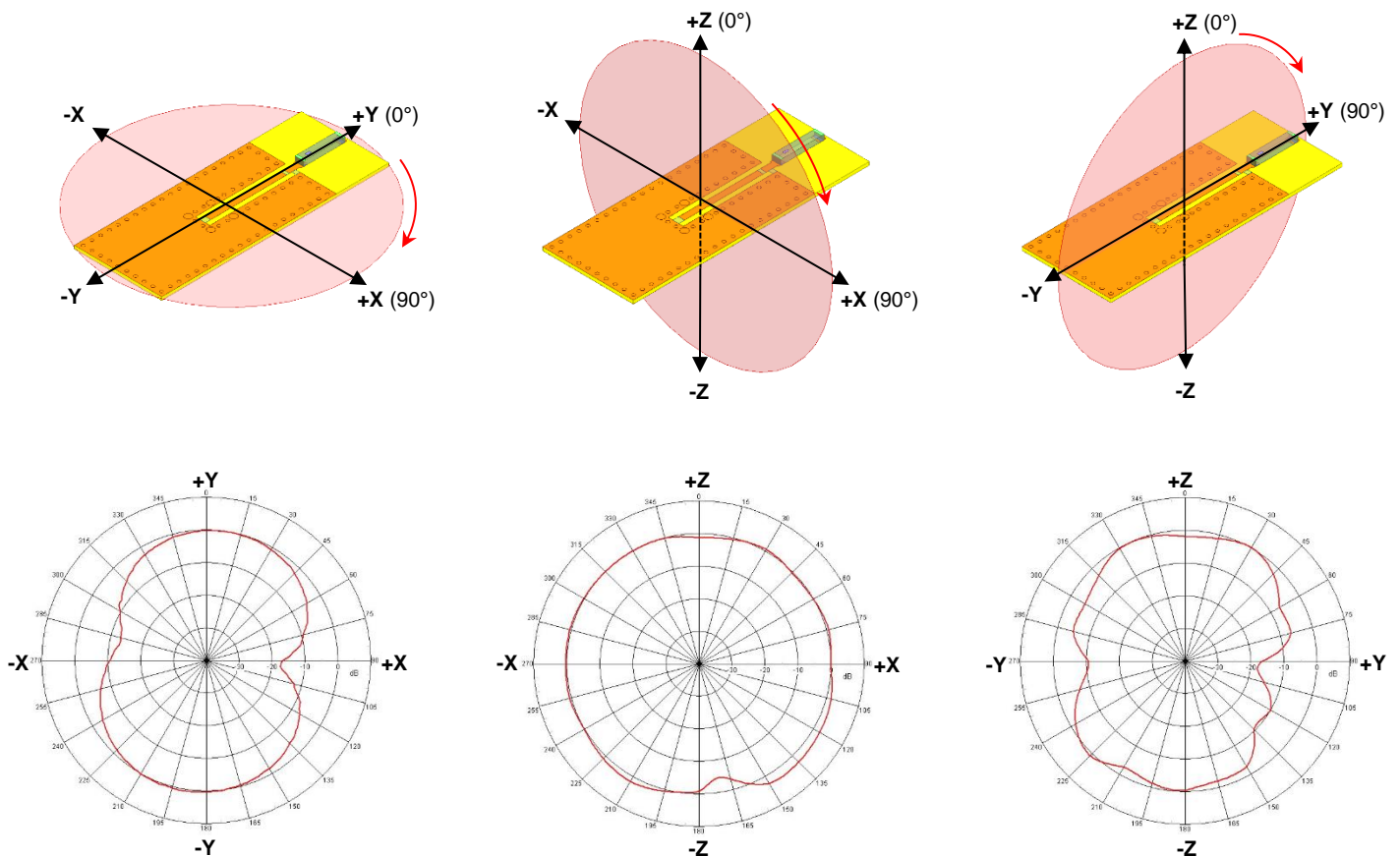
JTI P/N's for Matching Network
N/A

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

Evaluation Board Typical Return Loss Measurement (P/N 2450AT42A0100001CE1)

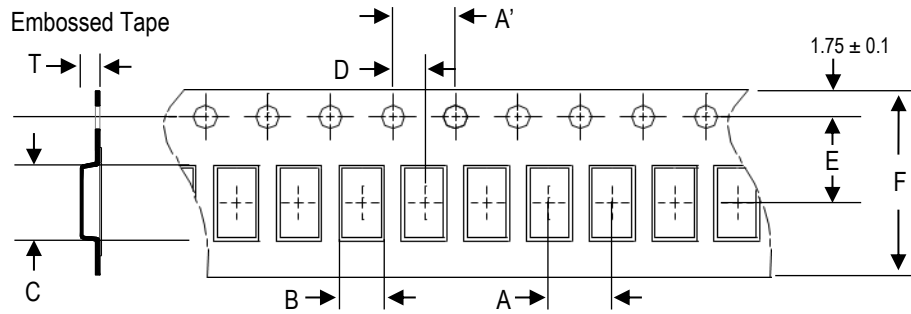


Evaluation Board Typical 2D Radiation Patterns @2450 MHz (P/N 2450AT42A0100001CE1)



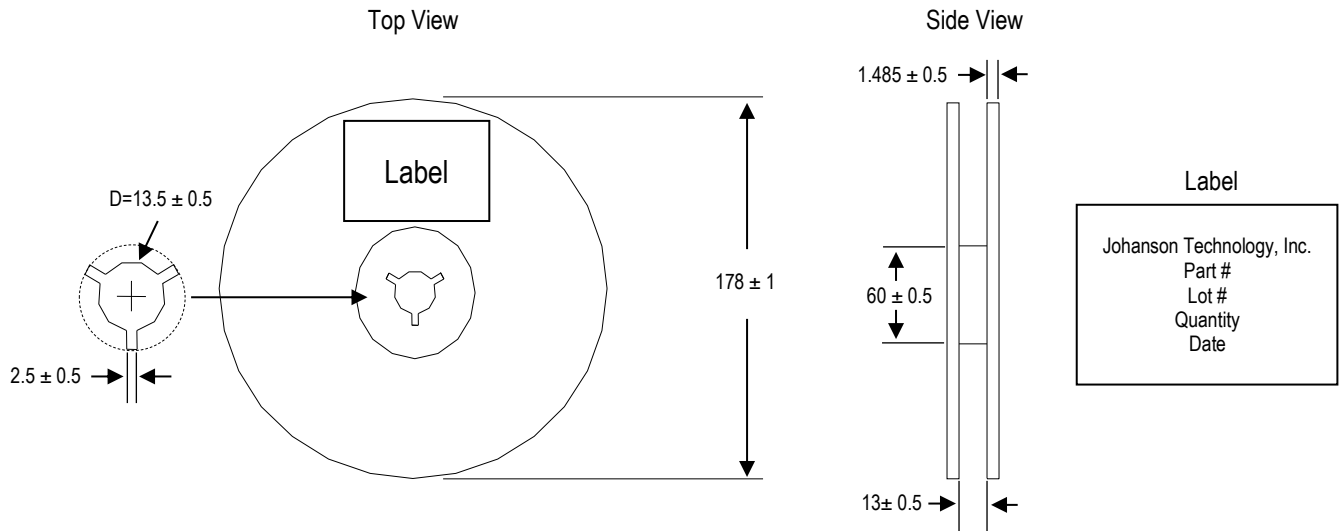
Tape and Reel Specification (Units in mm)

Tape Dimensions

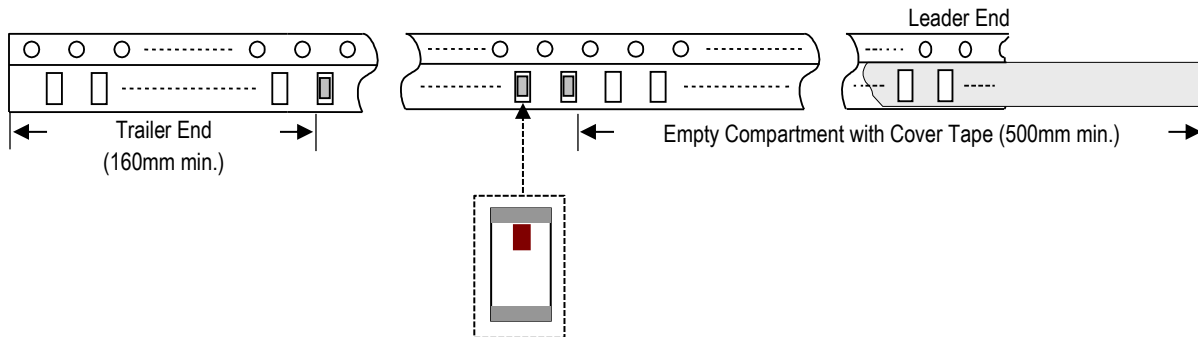


| A | A' | B | C | D | E | F | T | Quantity/reel | Tape material |
|---------|---------|---------|---------|----------|---------|----------|---------|---------------|--------------------|
| 4.0±0.1 | 4.0±0.1 | 2.4±0.1 | 5.4±0.1 | 2.0±0.05 | 5.5±0.1 | 12.0±0.1 | 1.2±0.1 | 2,000pcs. | Plastic (Embossed) |

Reel Dimensions



Leader and Trailer Dimensions



Orderable Part Number

| Packaging Style | Part Number | Termination |
|---------------------------------------|------------------------------------------|-------------|
| Bulk (loose pcs.) | 2450AT42A0100001B | Nickel Tin |
| T & R (7" Reel Embossed Tape) | 2450AT42A0100001E (Qty: 2,000 pcs./reel) | |
| Evaluation Board with 1 SMA Connector | 2450AT42A0100001CE1 | |

Important Links

[2450AT42A0100001E 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.

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