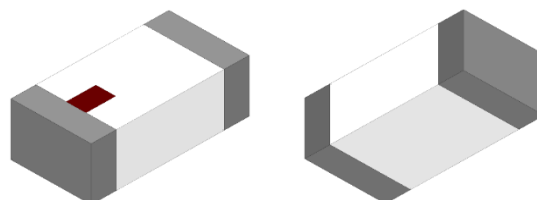




## 7.22 GHz RF Chip Antenna, AEC-Q200 Qualified

- 6.2 – 8.24 GHz Operational frequency
- UWB systems
- Mini SMD, EIA 0603
- Center-edge mount
- RoHS compliant
- AEC-Q200 Qualified

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 Center-edge



### General Specifications<sup>1 2</sup>

|                                 |             |
|---------------------------------|-------------|
| Operational Frequency (MHz)     | 6200 - 8240 |
| Impedance ( $\Omega$ )          | 50          |
| Return Loss (dB)                | 3.5 Min.    |
| Peak Gain (dBi)                 | 2.2 Typ.    |
| Average Gain (dBi)              | -1.8 Typ.   |
| Average Radiated Efficiency (%) | 72          |

### Maximum Ratings

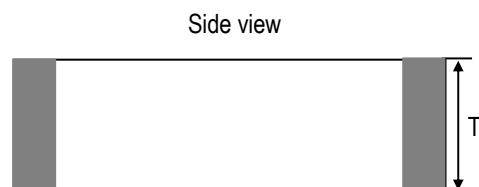
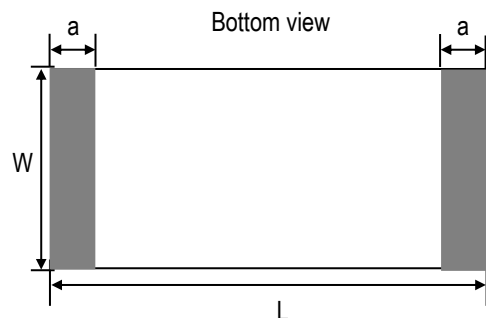
|                                                                         |                                                                |
|-------------------------------------------------------------------------|----------------------------------------------------------------|
| Power Capacity (W)                                                      | 1 Max. (CW)                                                    |
| Operating Temperature ( $^{\circ}\text{C}$ )                            | -40 to +105                                                    |
| Recommended Storage Conditions post-installation ( $^{\circ}\text{C}$ ) | -40 to +105                                                    |
| Recommended Storage Conditions and Period for Unused T&R Product        | 45% - 75% RH<br>+5 to +35 $^{\circ}\text{C}$<br>18 Months Max. |

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

<sup>2</sup> General specifications measured on Johanson's evaluation board P/N 7200AT14A2000001CE1.

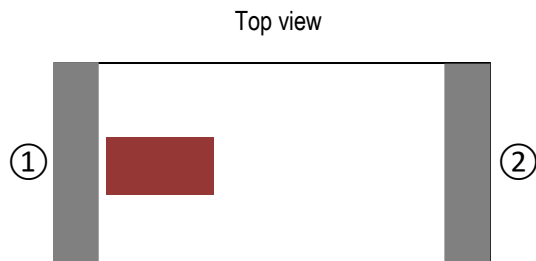
## Mechanical Dimensions

|          | Inches |   |       | Millimeters |   |      |
|----------|--------|---|-------|-------------|---|------|
| <b>L</b> | 0.063  | ± | 0.004 | 1.60        | ± | 0.10 |
| <b>W</b> | 0.031  | ± | 0.004 | 0.80        | ± | 0.10 |
| <b>T</b> | 0.016  | ± | 0.004 | 0.40        | ± | 0.10 |
| <b>a</b> | 0.010  | ± | 0.004 | 0.25        | ± | 0.10 |



## Terminal Configuration<sup>3</sup>

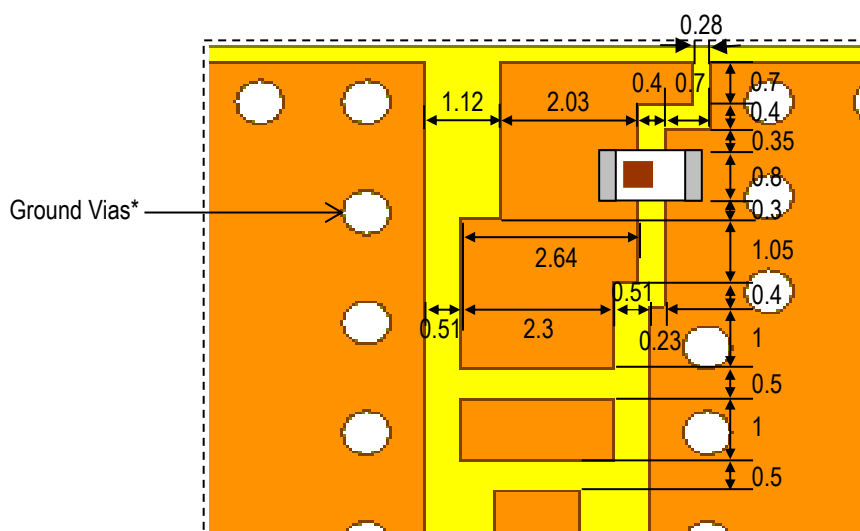
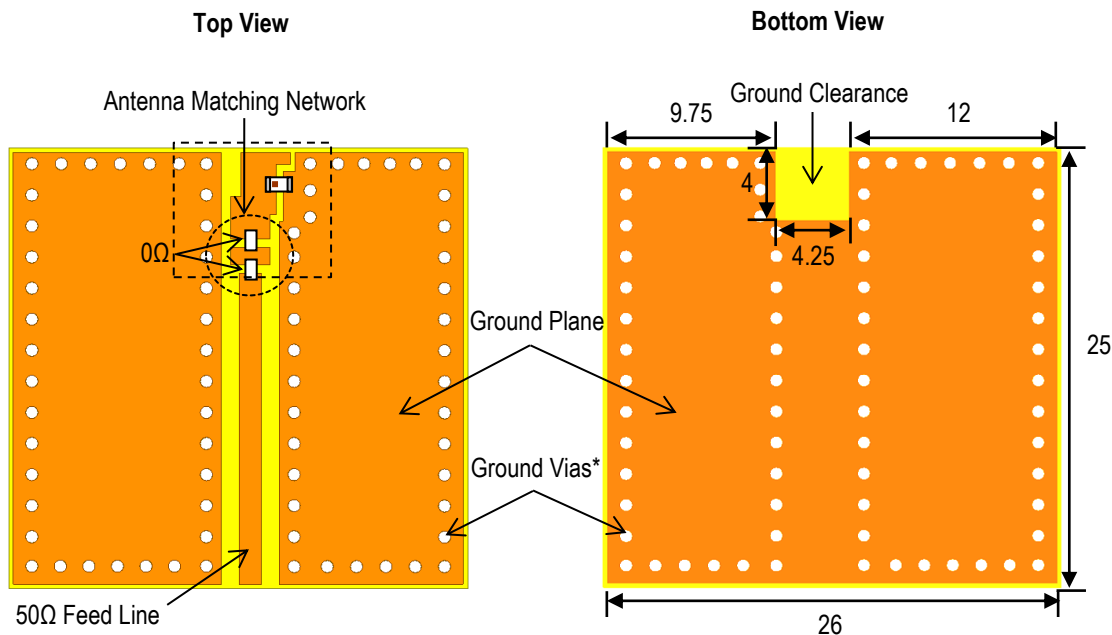
| Pin Number | Function           |
|------------|--------------------|
| 1          | Feed               |
| 2          | Soldering Terminal |



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

**Evaluation Board and Recommended Mounting Configuration (P/N 7200AT14A2000001CE1)**

All units in mm



JTI P/N's for Matching Network<sup>4</sup>

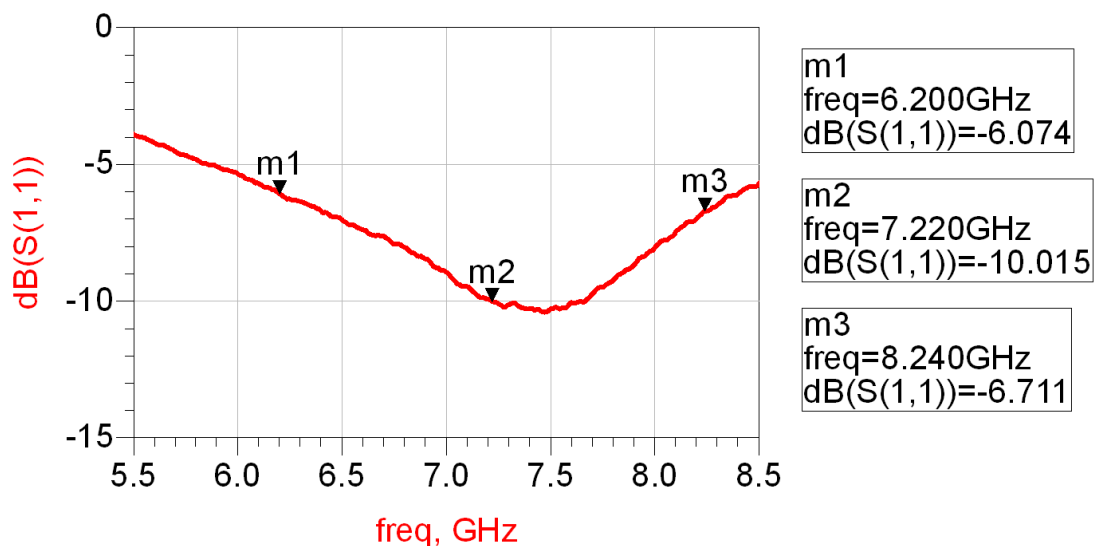
N/A

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

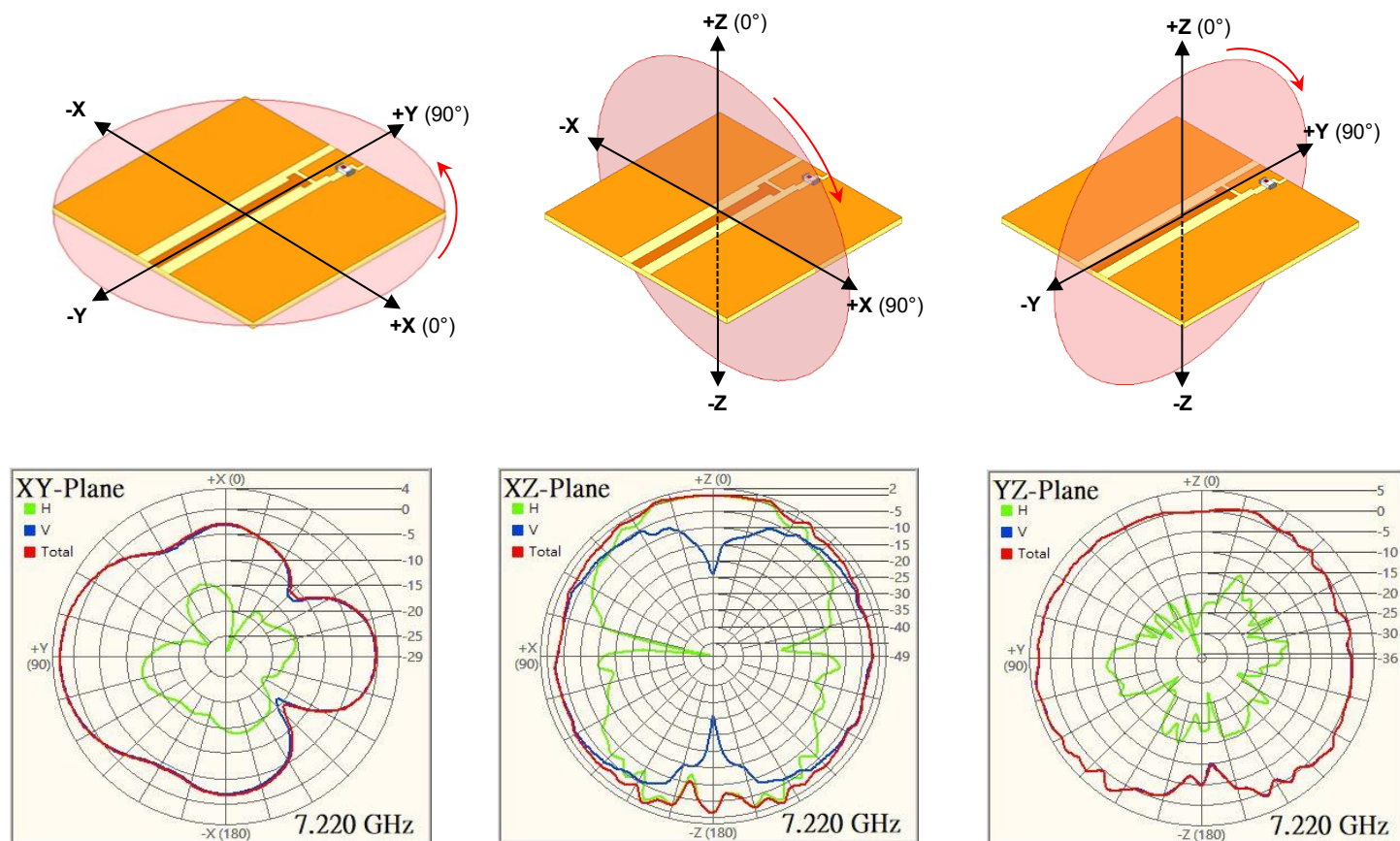
If you'd like the CAD PCB layout or have any questions,  
contact our application engineers at <https://www.johansontechnology.com/ask-a-question>

<sup>4</sup> It is recommended that the designer leave available slots for a "tee" (or series-shunt-series) 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.

**Evaluation Board Typical Return Loss Measurement (P/N 7200AT14A2000001CE1)**

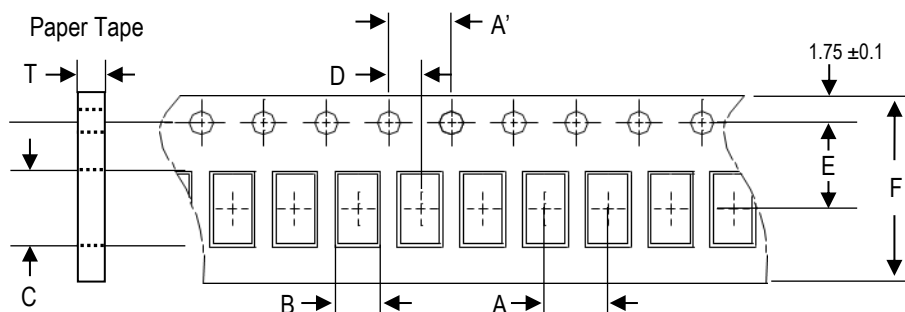


**Evaluation Board Typical 2D Radiation Patterns @7220 MHz (P/N 7200AT14A2000001CE1)**



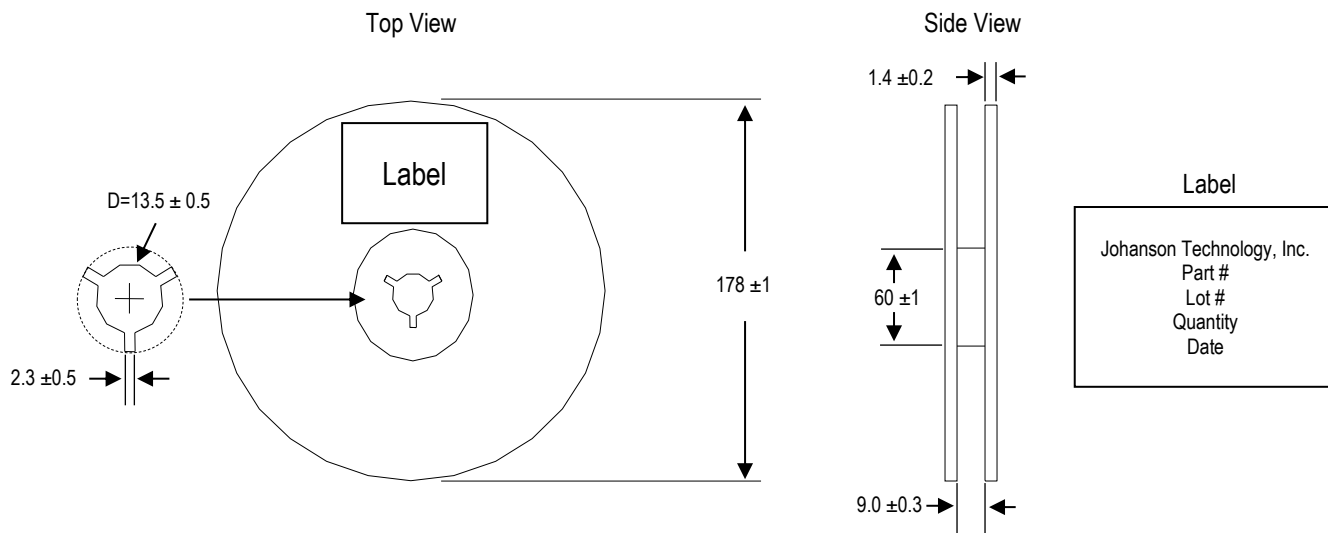
## Tape and Reel Specification (Units in mm)

### Tape Dimensions

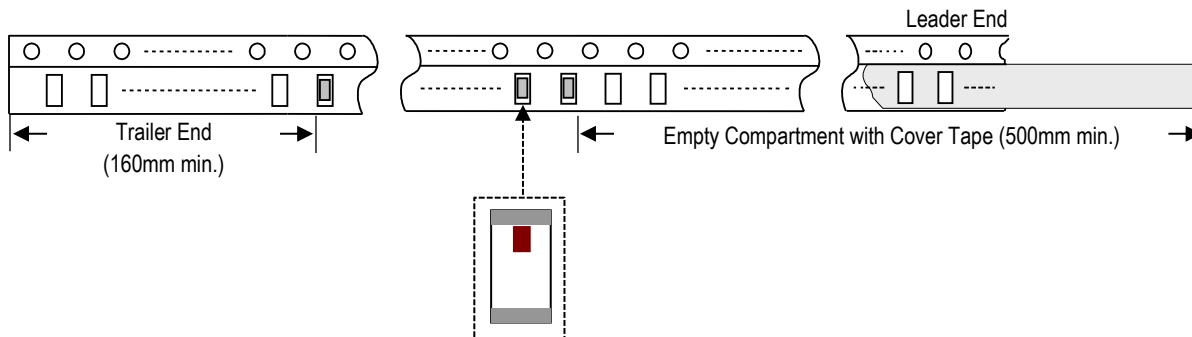


| A        | A'       | B         | C         | D        | E        | F        | T          | Quantity/reel | Tape material |
|----------|----------|-----------|-----------|----------|----------|----------|------------|---------------|---------------|
| 4.0 ±0.1 | 4.0 ±0.1 | 0.95 ±0.1 | 1.80 ±0.1 | 2.0 ±0.1 | 3.5 ±0.1 | 8.0 ±0.1 | 0.60 ±0.03 | 4,000pcs.     | Paper         |

### Reel Dimensions



### Leader and Trailer Dimensions



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