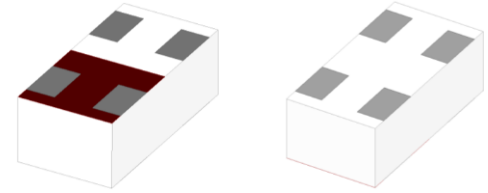


5.5 GHz RF Chip Antenna

- 5.15 – 5.85 GHz Operational frequency
- Wi-Fi, V2V (Vehicle to Vehicle communications)
- Ultra-Miniature SMD, EIA 0402
- Center-edge 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 Center-edge



General Specifications^{1 2}

Operational Frequency (MHz)	5150 - 5850	
Impedance (Ω)	50	
Frequency Bands (MHz)	5150 – 5850	5350 – 5700
Return Loss (dB)	3.0 Min.	6.0 Min.
Peak Gain (dBi)	0.0 Typ.	1.0 Typ.
Average Gain (dBi)	-3.0 Typ.	-1.5 Typ.

Maximum Ratings

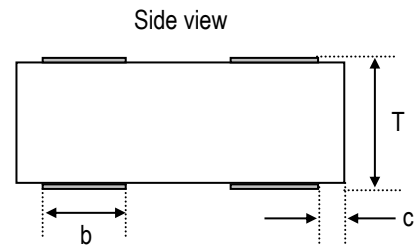
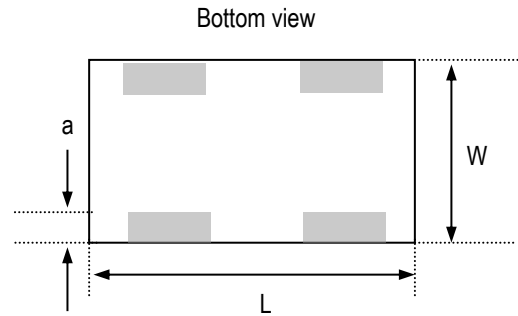
Power Capacity (W)	2 Max. (CW)
Operating Temperature ($^{\circ}\text{C}$)	-40 to +85
Recommended Storage Conditions post-installation ($^{\circ}\text{C}$)	-40 to +85
Recommended Storage Conditions and Period for Unused T&R Product	45% - 75% RH +5 to +35 $^{\circ}\text{C}$ 18 Months Max.

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 PN 5500AT07A0900001CE1.

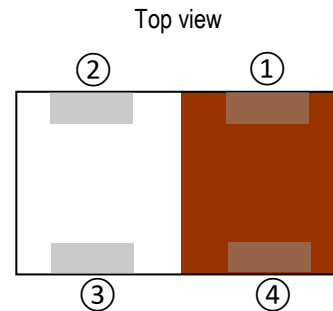
Mechanical Dimensions

	Inches		Millimeters	
L	0.039	± 0.004	1.00	± 0.10
W	0.020	± 0.004	0.50	± 0.10
T	0.015	Max.	0.37	Max.
a	0.006	+0.004/-0.002	0.15	+0.1/-0.05
b	0.010	+0.004/-0.002	0.25	+0.1/-0.05
c	0.003	+0.004/-0.002	0.08	+0.1/-0.05



Terminal Configuration³

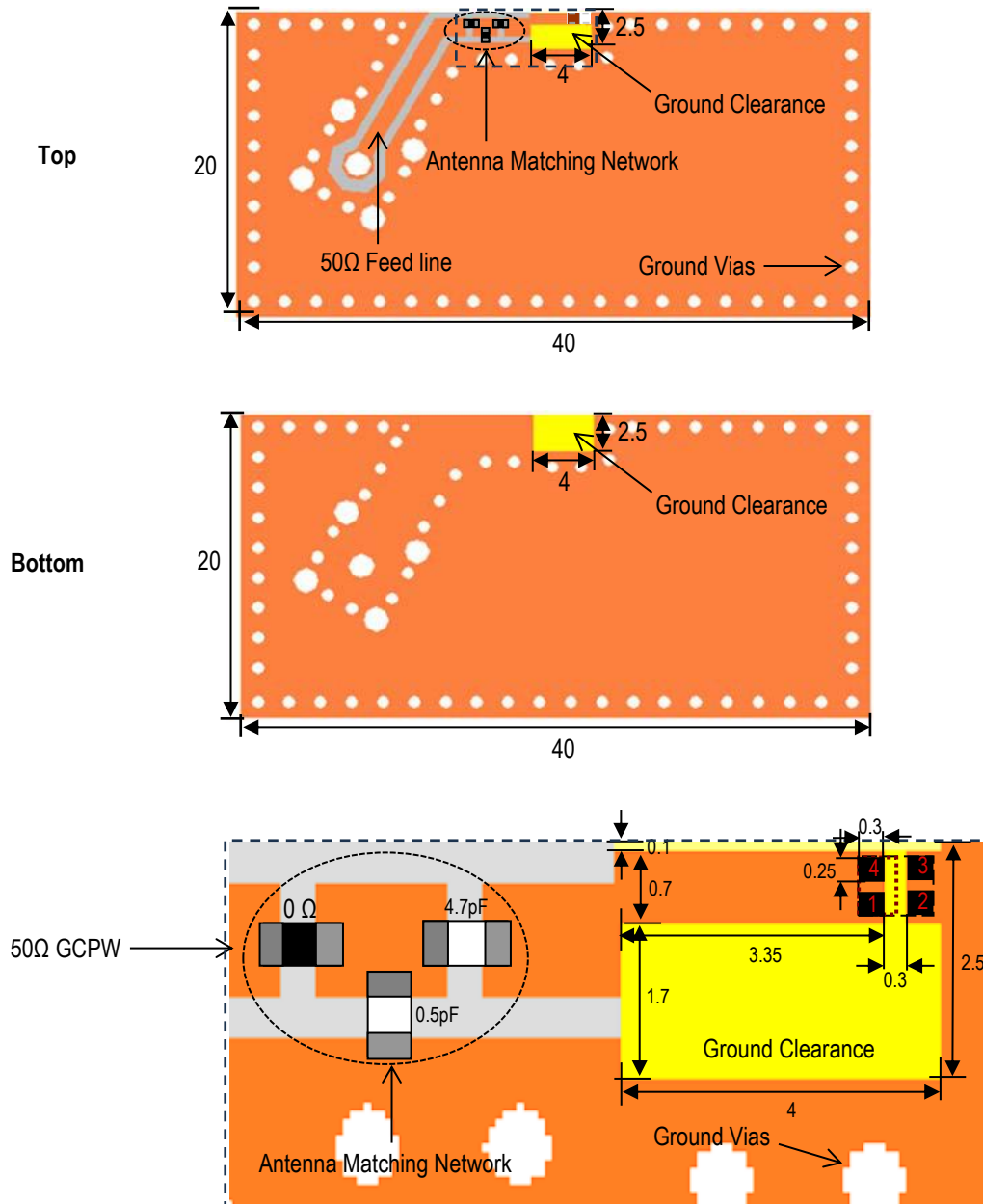
Pin Number	Function
1	Feed
2	GND
3	GND
4	Feed



³ 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 5500AT07A0900001CE1)

All units in mm



JTI P/N's for Matching Network⁴

Inductor (4.7nH): LRC0402CS4N7GV001T

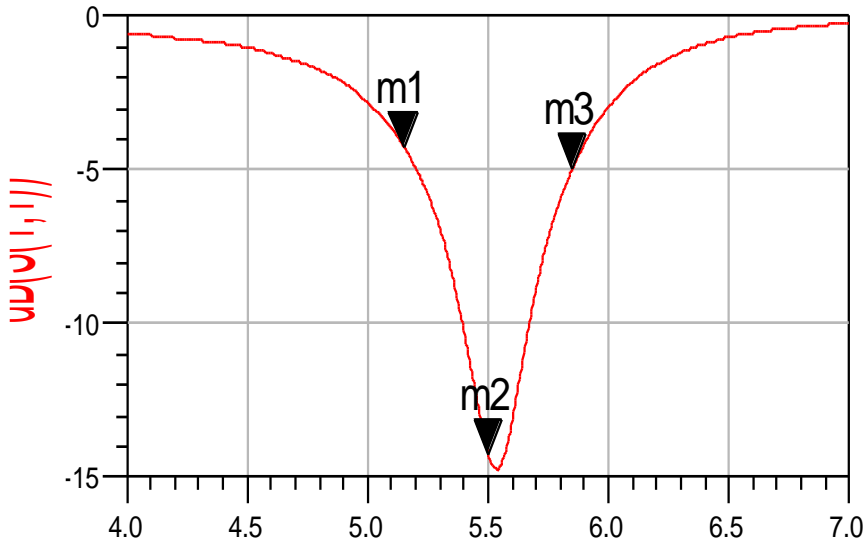
Capacitor (0.5pF): QSCF500Q0R5A1GV001T

*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 "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 Return Loss Measurement (P/N 5500AT07A0900001CE1)

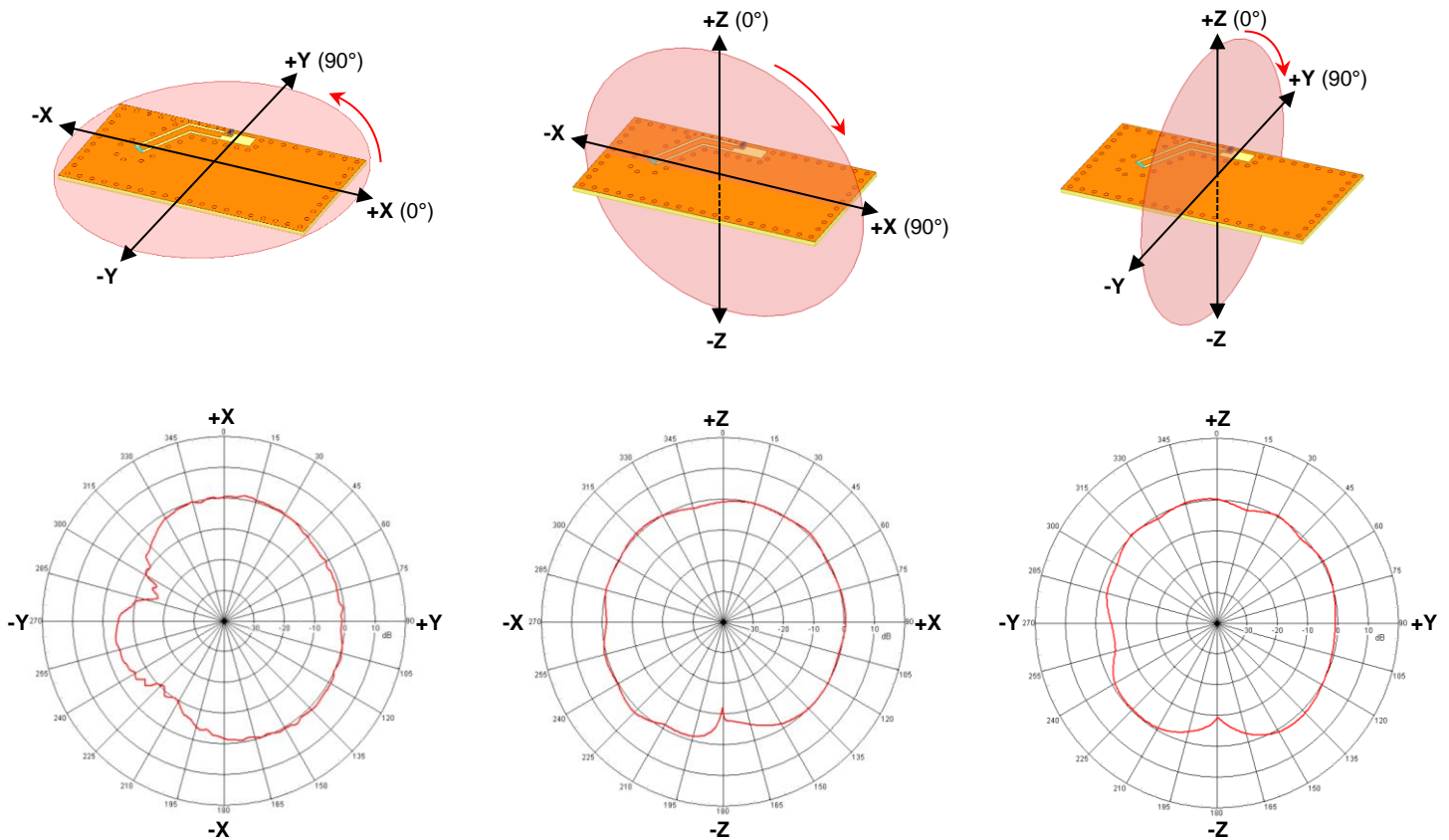


m1
freq=5.150GHz
dB(S(1,1))=-4.236

m2
freq=5.500GHz
dB(S(1,1))=-14.267

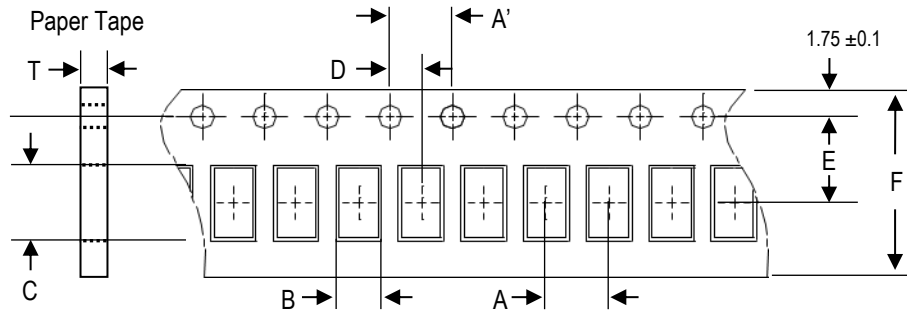
m3
freq=5.850GHz
dB(S(1,1))=-4.945

Evaluation Board 2D Radiation Patterns @5500 MHz (P/N 5500AT07A0900001CE1)



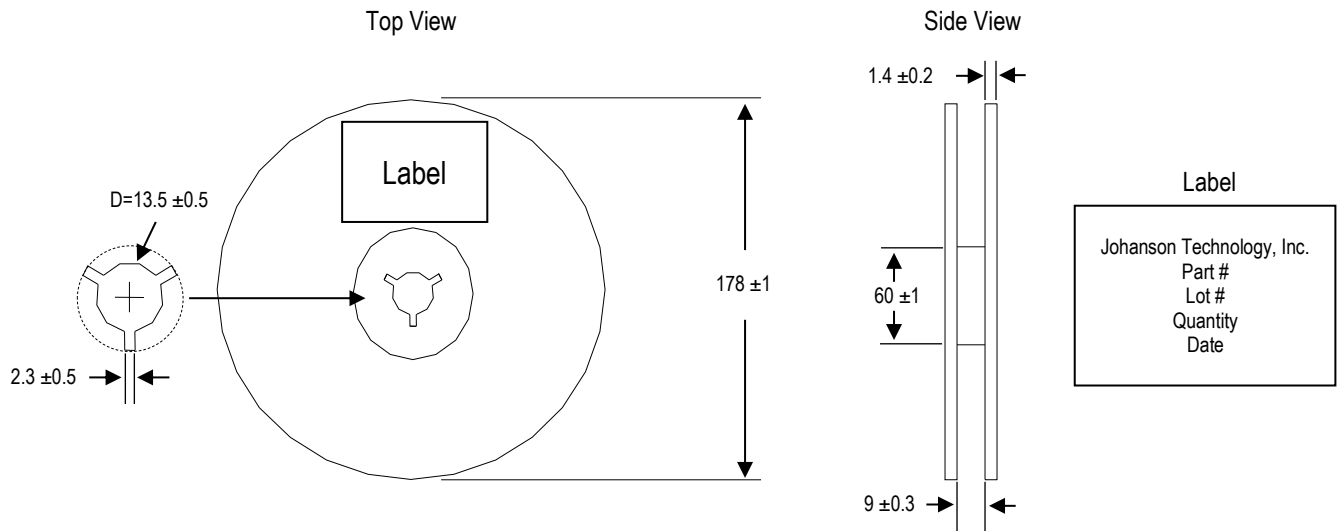
Tape and Reel Specification (Units in mm)

Tape Dimensions

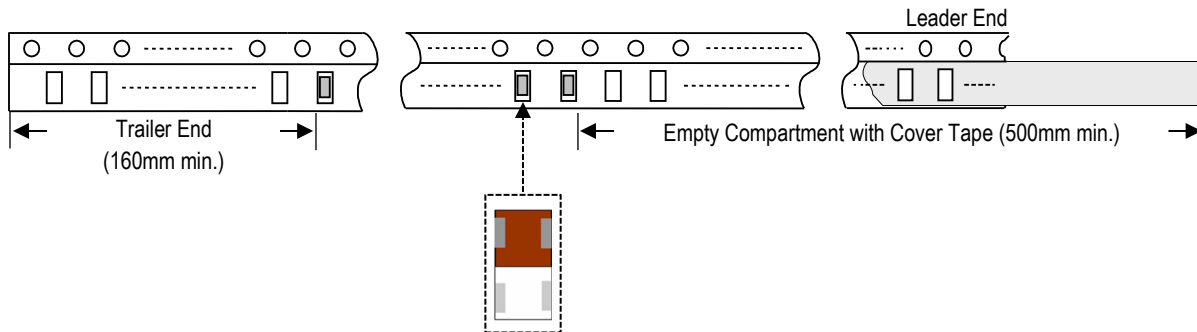


A	A'	B	C	D	E	F	T	Quantity/reel	Tape material
2.0 ±0.05	4.0 ±0.1	0.62 ±0.03	1.12 ±0.03	2.0 ±0.05	3.5 ±0.05	8.0 ±0.1	0.43 ±0.03	10,000 pcs.	Paper

Reel Dimensions



Leader and Trailer Dimensions



Orderable Part Number

Packaging Style	Part Number	Termination
Bulk (loose pcs.)	5500AT07A0900001B	Nickel Tin
T & R (7" Reel Paper Tape)	5500AT07A0900001T (Qty: 10,000 pcs./reel)	
Evaluation Board with 1 SMA Connector	5500AT07A0900001CE1	

Important Links

[5500AT07A0900001T 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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