

# High Frequency Ceramic Solutions

AEC-Q200 Qualification Available

**915 MHz ISM Antenna for small form factor applications**

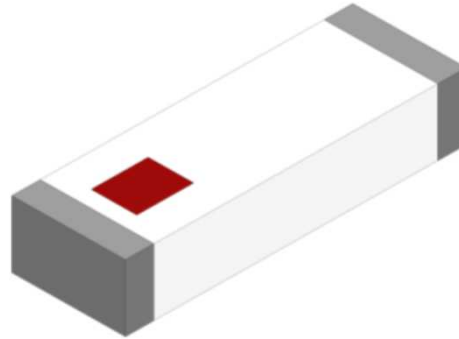
**P/N 0915AT43A0026**

Detail Specification: 2/11/2021

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General Specifications	
Part Number	0915AT43A0026
Frequency (MHz)	902 - 928
Peak Gain (dBi)	1.0 typ. ((XZ-total)
Average Gain (dBi)	-4.0 typ. (XZ-total)
Return Loss (dB)	8.5 min.
Impedance ( $\Omega$ )	50
Input Power (W)	2 max. (CW)
Operating Temperature	-40 to +85°C
Recommended Storage Conditions and Period for unused T&R Product	+5 to +35°C Humidity 45 - 75% RH 18 months max.
Reel Quantity (pcs/reel)	1,000

Let us help you with the antenna design, optimization, and tuning!  
<https://www.johansontechnology.com/ask-a-question>

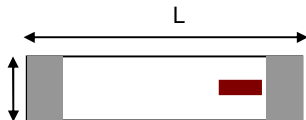


## Part Number Explanation

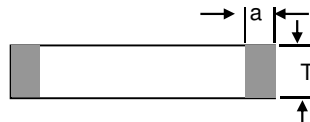
P/N Suffix	Packing Style	Bulk (loose pcs.)	Suffix = S	e.g. 0915AT43A0026S
		T & R	Suffix = E	e.g. 0915AT43A0026E
		100% Tin	Suffix = None	e.g. 0915AT43A0026(E or S)
	Evaluation Board	0915AT43A0026-EB1SMA		

## Mechanical Dimensions

	In	mm
L	0.276 ± 0.008	7.00 ± 0.20
W	0.079 ± 0.008	2.00 ± 0.20
T	0.031 +0.004 / -0.008	0.80 +0.10 / -0.20
a	0.020 ± 0.012	0.50 ± 0.30



Top View



Side View

## Terminal Configuration

No.	Function
1	Feeding Point
2	NC*



\*This terminal must be soldered for anchoring and functionality purposes.

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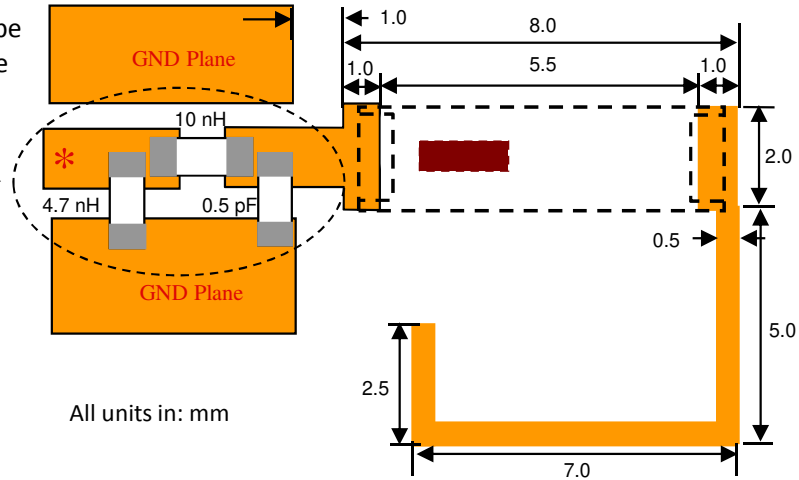
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## Mounting Considerations I

Mount these devices with maroon mark facing up. \*Line width should be designed to provide 50  $\Omega$  impedance matching characteristics.

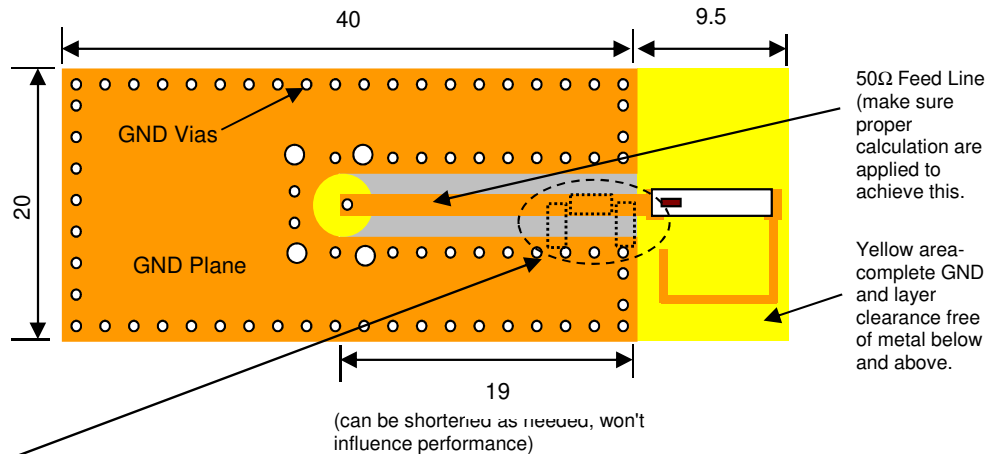
Matching circuit\*\*:  
See **Note 2** below!

JTI P/N for Matching Circuit:\*\*  
Inductor (4.7nH): L-07C4N7SV6T  
Inductor (10nH): L-07C10NJV6T  
Cap (0.5pF): 500R07S0R5BV4T



All units in: mm

**Johanson Test Board (orderable)**  
p/n: 0915AT43A0026-EB1SMA



50  $\Omega$  Feed Line  
(make sure proper calculation are applied to achieve this.)

Yellow area-  
complete GND  
and layer  
clearance free  
of metal below  
and above.

**\*\*Note 2:** 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. If you need further help, such as needing the layout file of the above, contact our RF Applications Eng. Team at: <https://www.johansontechnology.com/ask-a-question>

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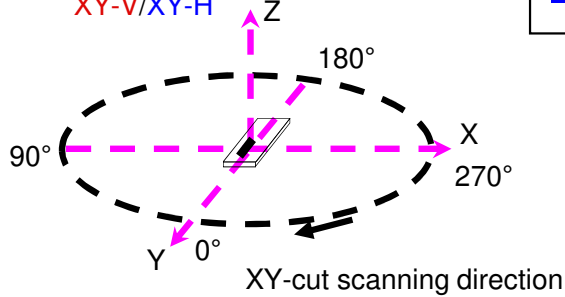
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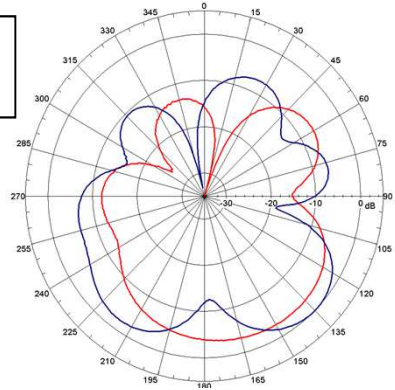
## Typical Radiation Performance @ 25° C using 0915AT43A0026-EB1SMA

### Typical Radiation Patterns

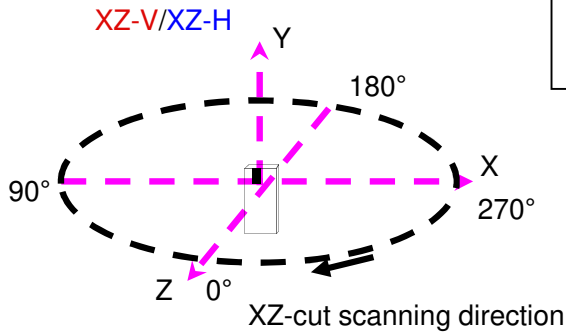
XY-V/XY-H



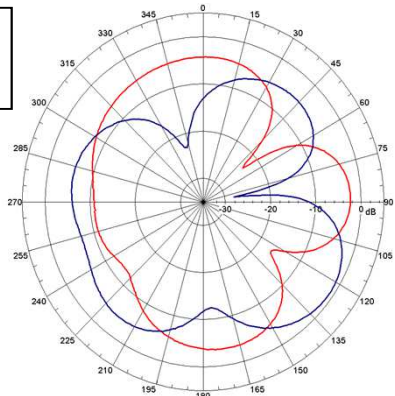
XY cut @915MHz  
 — Vertical  
 — Horizontal



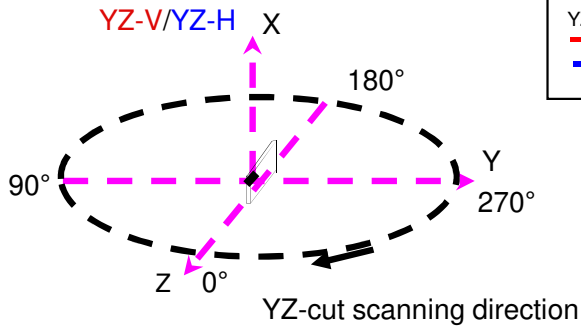
XZ-V/XZ-H



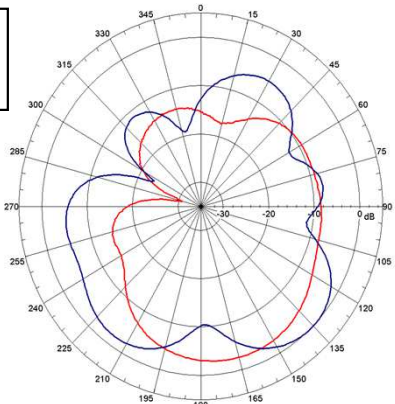
XZ cut @915MHz  
 — Vertical  
 — Horizontal



YZ-V/YZ-H



YZ cut @915MHz  
 — Vertical  
 — Horizontal



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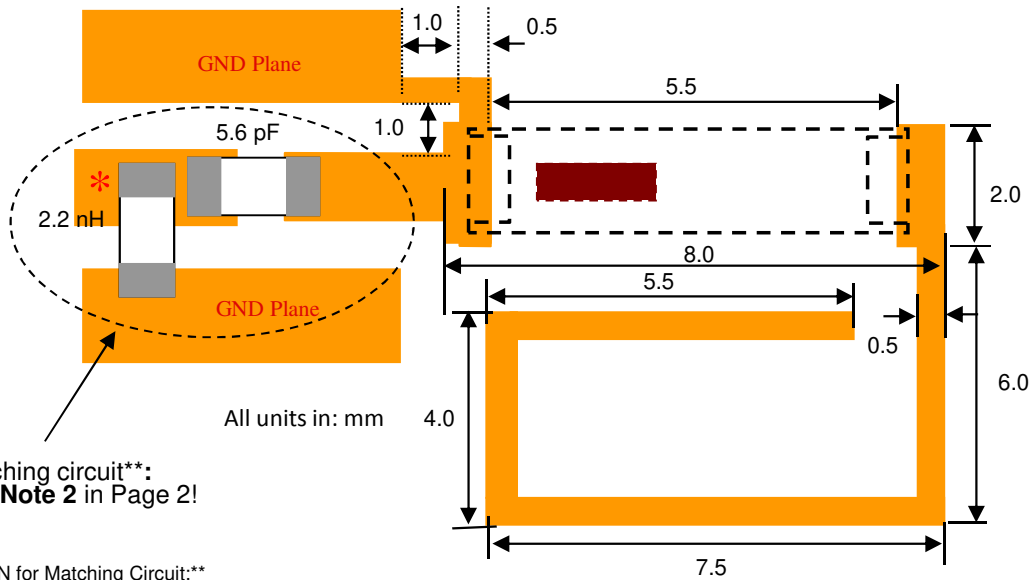
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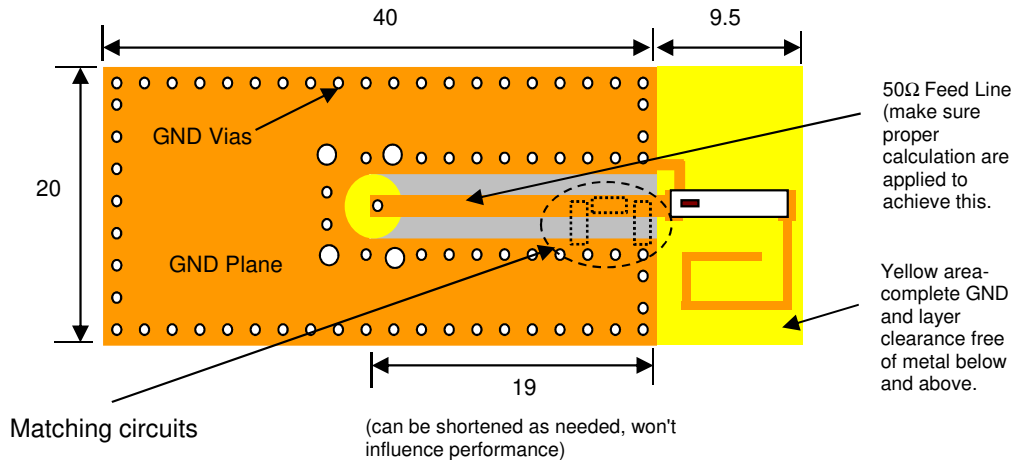
## Mounting Considerations II

Mount these devices with maroon mark facing up. \*Line width should be designed to provide 50 Ω impedance matching characteristics.



Matching circuit\*\*:  
See Note 2 in Page 2!

JTI P/N for Matching Circuit:\*\*  
Inductor (2.2nH):L-07C2N2SV6T  
Cap (5.6pF):500R07S5R6BV4T



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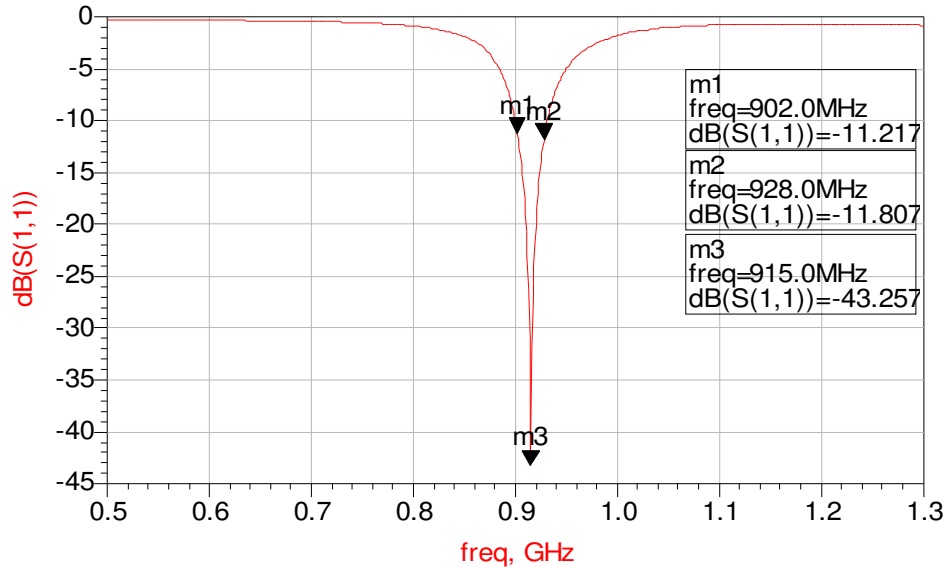
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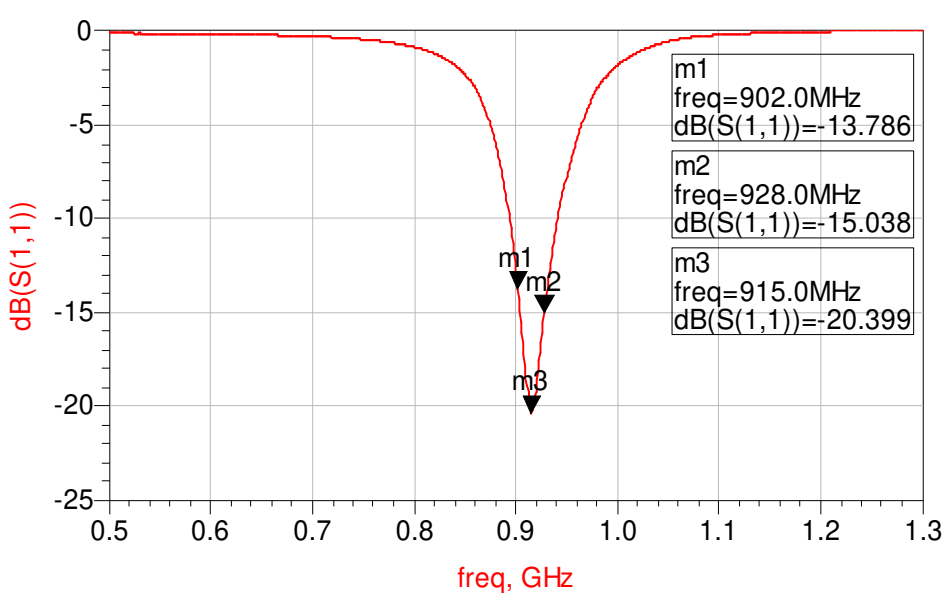
## Mounting Considerations I: Electrical Performance @25°C

### Return Loss (with matching)



## Mounting Considerations II: Electrical Performance @25°C

### Return Loss (with matching)



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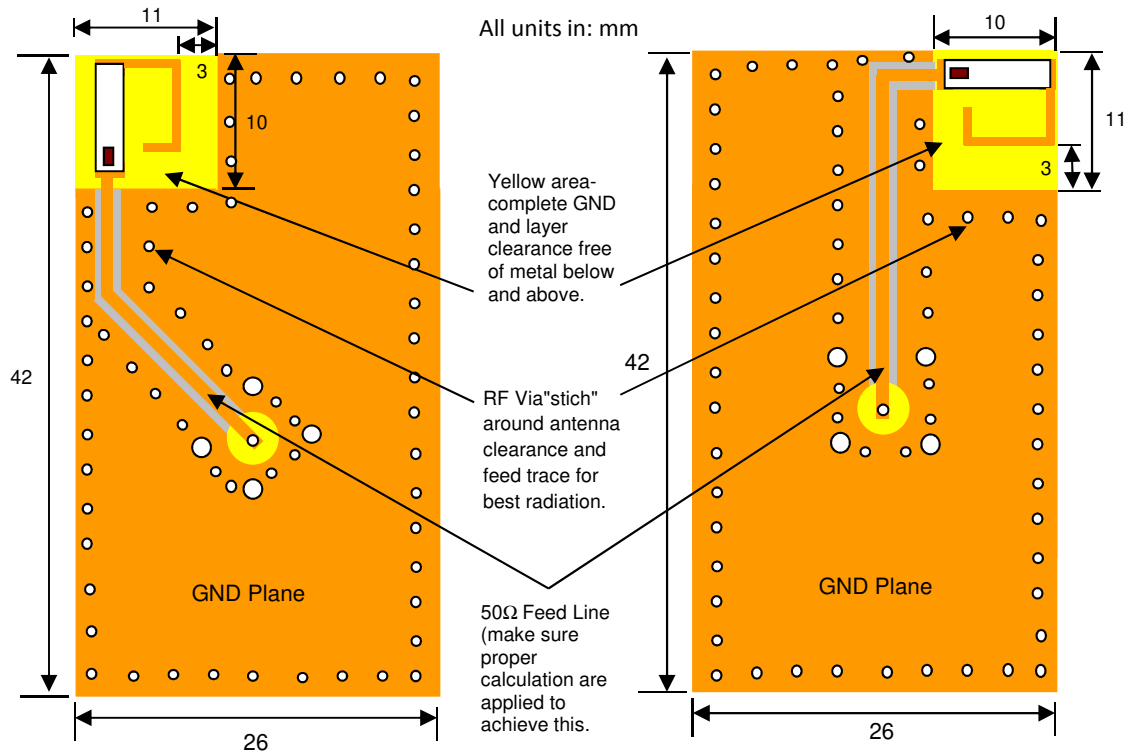
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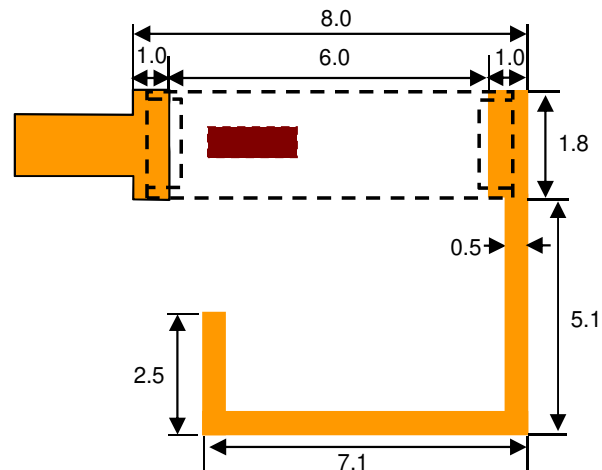
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## Mounting Considerations III

We have conducted internal studies to show that the following corner placements provide antenna efficiency results with minimal detrimental effects.



**Note:** It is recommended that the designer leave available slots for a "pi" (or shunt-series-shunt) network. 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. If you need further help, such as needing the layout file of the above, contact our RF Applications Eng. Team at: <https://www.johansontechnology.com/ask-a-question>



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## Antenna tuning, optimization, and validation services:

<https://www.johansontechnology.com/ipc-antenna-services>

## For more antennas and to download measured S-parameters, go to:

<https://www.johansontechnology.com/antennas>

## Soldering Information

<https://www.johansontechnology.com/ipcsoldering-profile>

## MSL Info

<https://www.johansontechnology.com/msl-rating>

## Packaging Information

<https://www.johansontechnology.com/tape-reel-packaging>

## For layout review contact our applications team at:

<https://www.johansontechnology.com/ask-a-question>

## RoHS Compliance

<https://www.johansontechnology.com/rohs-compliance>

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