High Frequency Ceramic Solutions

General Specifications
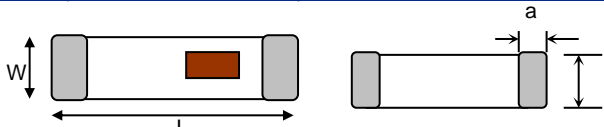
Part Number	0868AT43A0020	Input Power	3W max. (CW)
Frequency Range	858 - 878 Mhz	Impedance	50 Ω
Peak Gain	-1.0 dBi typ. (XZ-total)	Operating Temperature	-40 to +85°C
Average Gain	-4.0 dBi typ. (XZ-total)	Reel Quanity	1,000
Return Loss	9.5 dB min.	MSL	1

Part Number Explanation

P/N Suffix	Packing Style	Bulk	Suffix = S	eg. 0868AT43A0020S
		T & R	Suffix = E	eg. 0868AT43A0020E
	Termination style	100% Tin	Suffix = None	eg. 0868AT43A0020 (E or S)
		Tin / Lead	Please Consult Factory	

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	+ .004/-.008	0.80	+ 0.1/-0.2
a	0.020	± 0.012	0.50	± 0.30

Terminal Configuration

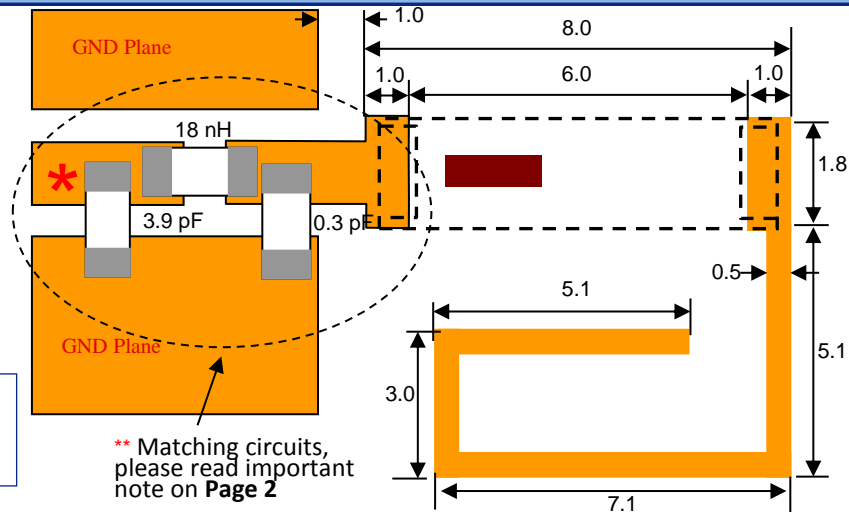| No.	Function
1	Feeding Point
2	NC
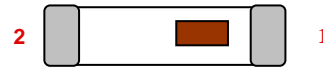
Mounting Considerations I

Mount these devices with brown mark facing up. Units: mm

* Line width should be designed to provide 50 Ω impedance matching characteristics.

With Matching Circuit

JTI P/Na for Matching Circuit: **
Cap (0.3pF): 500R07S0R3BV4T
Cap (3.9pF): 500R07S3R9BV4T
Inductor (18nH): L-07C18NJV6T

** Matching circuits, please read important note on **Page 2**

Johanson Technology, Inc. reserves the right to make design changes without notice.
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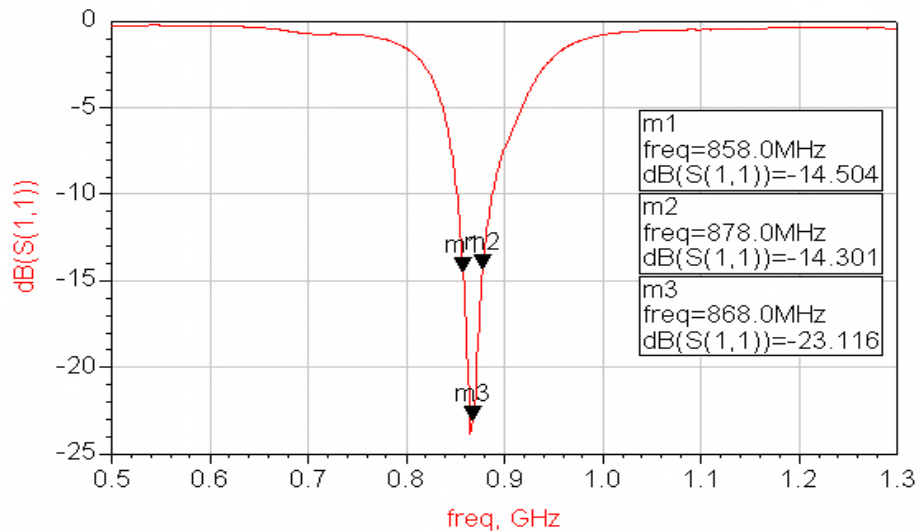# High Frequency Ceramic Solutions

Mounting Considerations I

Test Board used orderable p/n: 0868AT43A0020-EB1SMA (comes with SMA connector)

Note: 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 monted on Johanson's evaluation board. The matching values on clinet's PCB will be different. Go to: www.johansontechnology.com/tuning and see how to obtain the new values. If you need further help, contact our RF Applications Eng Team at: www.johansontechnology.com/ask-a-question

Return Loss (with matching)

m1
freq=858.0MHz
dB(S(1,1))=-14.504

m2
freq=878.0MHz
dB(S(1,1))=-14.301

m3
freq=868.0MHz
dB(S(1,1))=-23.116

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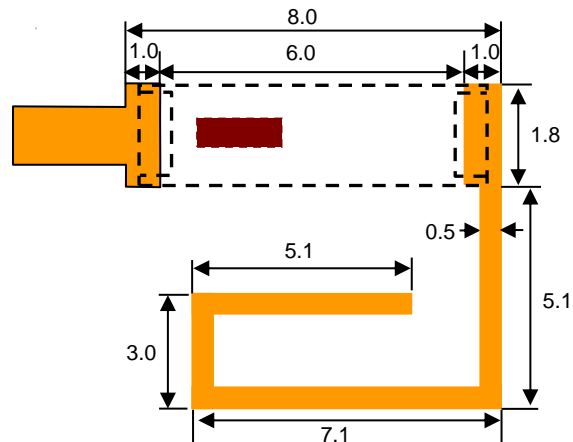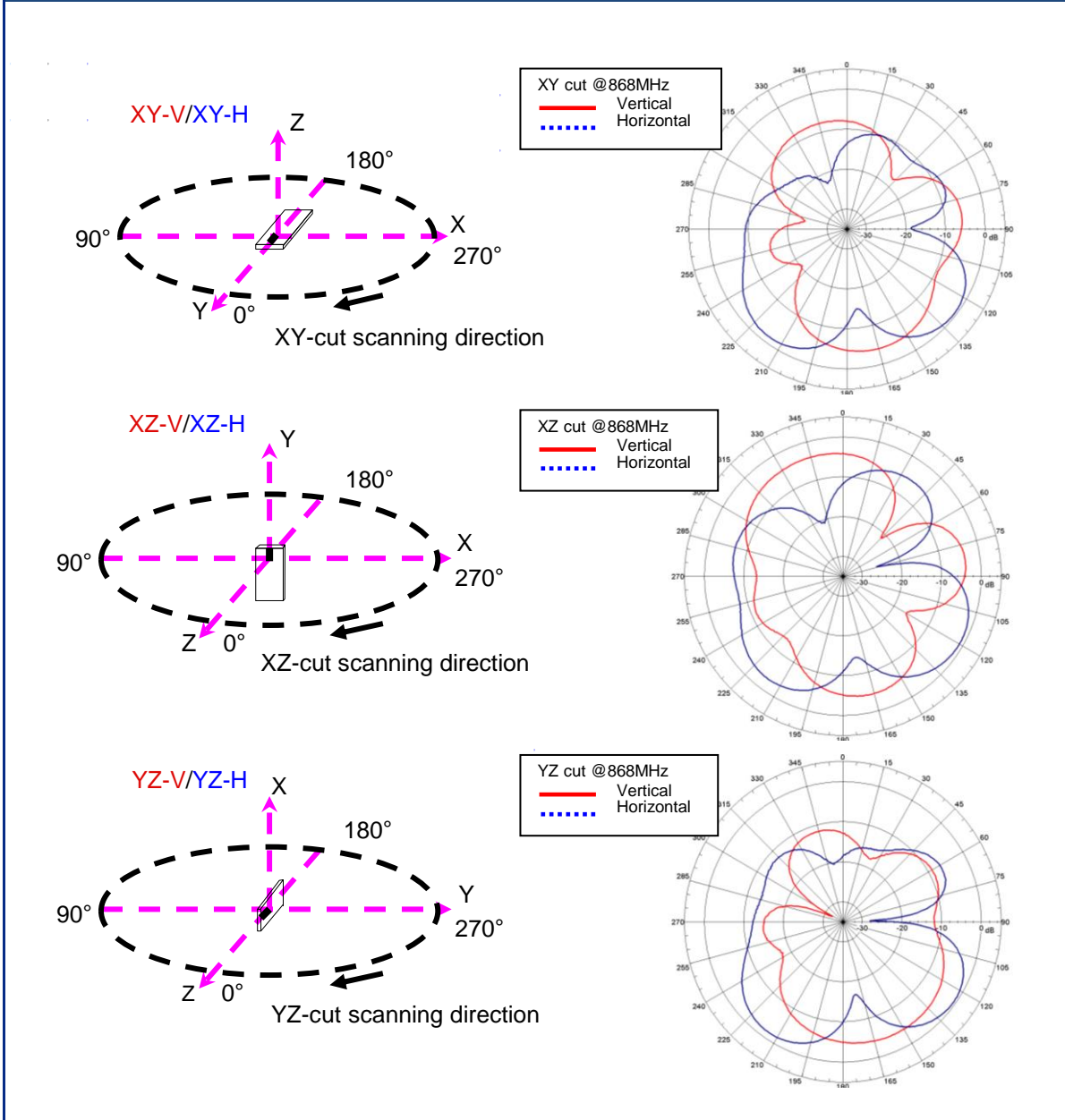## Mounting Considerations II

We have conducted internal studies to show that the following corner placements provide antenna efficiency results with minimal detrimental effects.
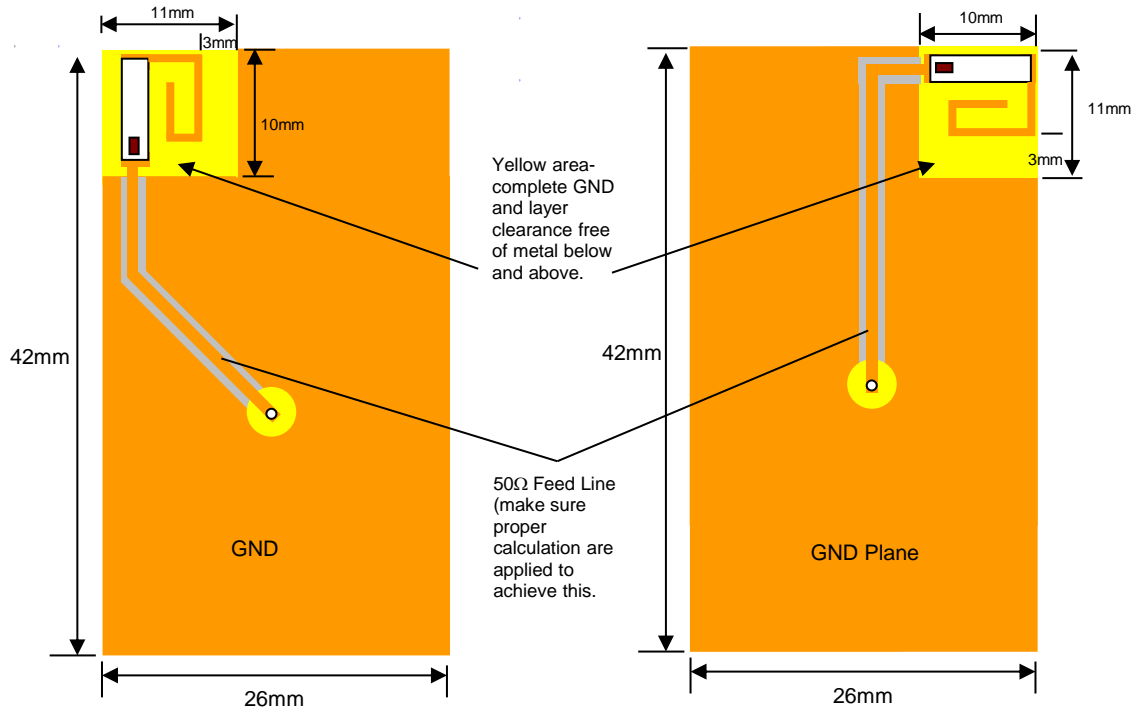
Yellow area-complete GND and layer clearance free of metal below and above.

50Ω Feed Line (make sure proper calculation are applied to achieve this.)

GND

GND Plane

Note: 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. Go to: 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: www.johansontechnology.com/ask-a-question

Typical Radiation Performance @ 25° C using 0868AT43A0020-EB1SMA

XY-V/XY-H

XY cut @868MHz
Vertical
Horizontal

XY-cut scanning direction

XZ-V/XZ-H

XZ cut @868MHz
Vertical
Horizontal

XZ-cut scanning direction

YZ-V/YZ-H

YZ cut @868MHz
Vertical
Horizontal

YZ-cut scanning direction