Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

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"High Frequency Ceramic Solutions"

2.45 GHz High Gain SMD Chip Antenna — P/N 2450AT45A100

Detail Specification: 11/7/2016

Would you like a quote? Click here: www.johansontechnology.com/request-a-quote (please provide annual usage)

General Specifications	
Part Number	2450AT45A100
Frequency Range	2400 - 2500 MHz
Operating Temp	-40°C to +125°C
Storage Temp	-40°C to +85°C
Input Power	3W max. (CW)
Reel Quantity	1,000

Antenna Gain Based on Orientation	
Mounting1 Vertical Orientation (Page 2)	2.2 dBi typ. (XZ-V)
Mounting2 "Horizontal Orientation Type A" (Pages 4/5)	1.5 dBi typ. (XZ-V)
Mounting3 "Horizontal Orientation Type B" (Pages 7/8)	1.3 dBi typ. (XZ-V)

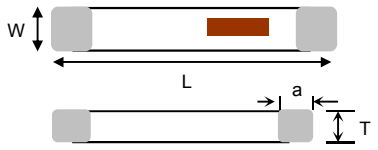
Use our antenna design services! www.johansontechnology.com/ipc-antenna-services
2 Free layout reviews and if you need us to tune and characterize the antenna on your design (anechoic chamber) we can do that too (lab fee may apply for the latter).

Part Number Explanation

P/N Suffix	**Packaging Style***	T & R (1000pcs/reel)	Suffix = E	Eg. 2450AT45A100E
		Bulk (loose pieces)	Suffix = S	Eg. 2450AT45A100S
	Termination style	100% Matte Tin		
	Evaluation Boards (1-port SMA antenna test boards, pre-tuned)	2450AT45A100-EB1SMA (Page 2)		
		2450AT45A100-EB2SMA (Page 5)		
		2450AT45A100-EB3SMA (Page 8)		

Mechanical Specifications

	In	mm
L	0.374 ± 0.008	9.50 ± 0.20
W	0.079 ± 0.008	2.00 ± 0.20
T	0.047 +.004/-.008	1.20 +0.1/-0.2
a	0.020 ± 0.012	0.50 ± 0.30



Terminal Configuration

No	Function
1	Feeding Point
2	NC

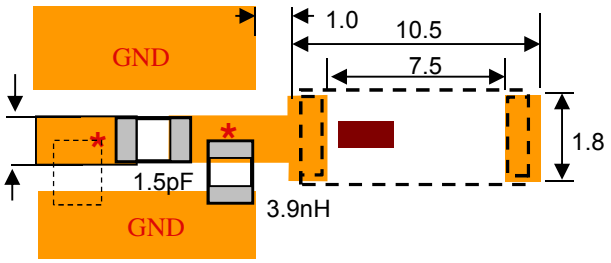
Mounting Considerations 1: "Vertical Orientation"

Mount these devices with red mark facing up.

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

Want the layout file of this? Send us a message at: www.johansontechnology.com/ask-a-question

Let us help you design this antenna to your PCB and/or optimize your layout for best radiated performance. Send us a message by clicking on the link above.



These matching circuit values only apply to Johanson's evaluation board, they will be different on the client's PCB, see pages 2, 5 and 10 for details.

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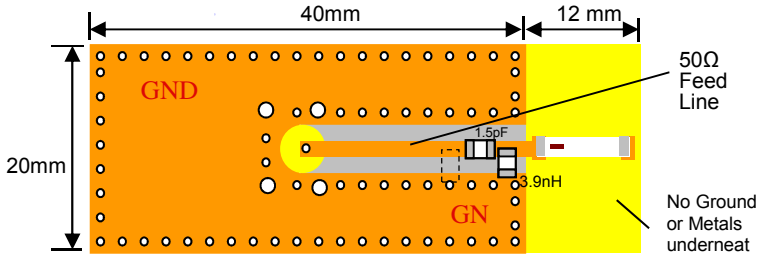
Typical Electrical Specs for "Vertical Orientation" (T=25°C)			
Frequency Range	2400 - 2500 Mhz	**Peak Gain**	2.2 dBi typ. (XZ-V)
Return Loss	9.5 dB min.	**Average Gain**	1.0 dBi typ. (XZ-V)

Typical Electrical Characteristics for Mounting Considerations 1 "Vertical Orientation" (T=25°C)

Test Board
Orderable Evaluation board:
p/n: 2450AT45A100-EB1SMA

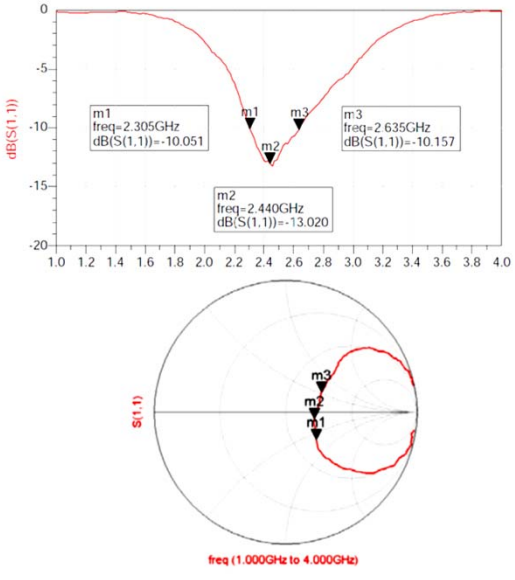
Let us help you tune/optimize the antenna!
Click on the link below



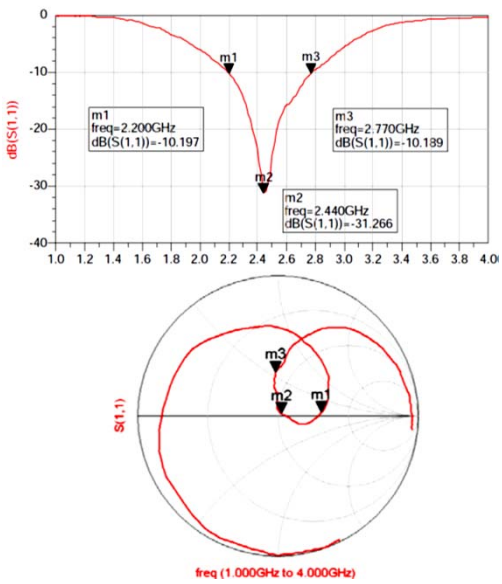
Note: It is recommended that the designer leave available slots for a "pi" (or shunt-series-shunt) network. The antenna matching network values above are used when antenna is minted on Johanson's evaluation board. The matching values on client's PCB will be different, go to: http://johansontechnology.com/tuning 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

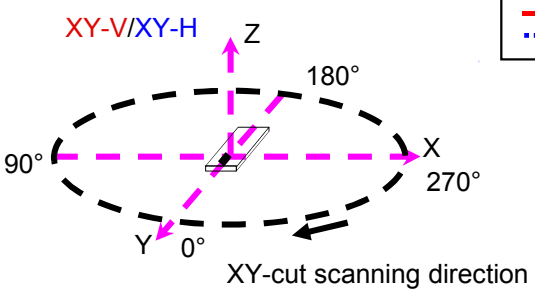
a) Without a Matching Circuit



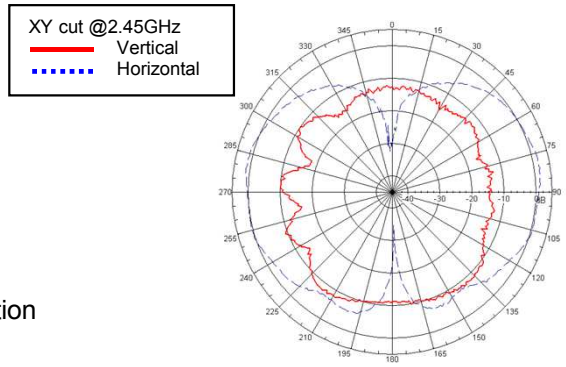
a) With a Matching Circuit

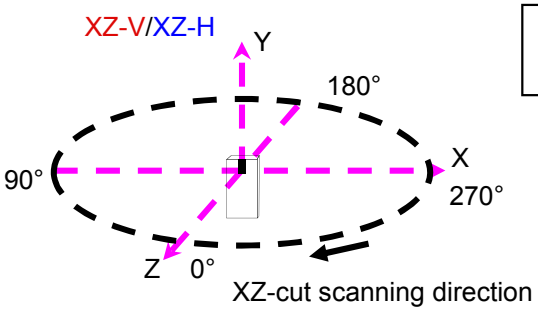


Typical Radiation Patterns for "Vertical Orientation" (@25C)

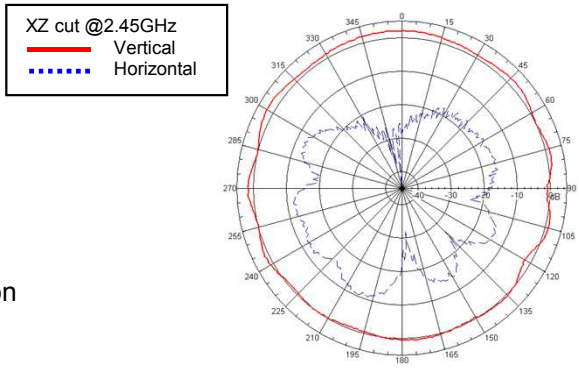


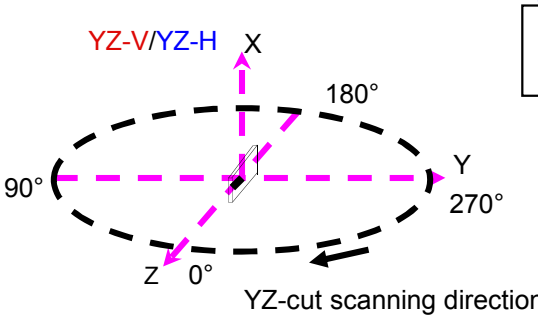
XY-cut scanning direction



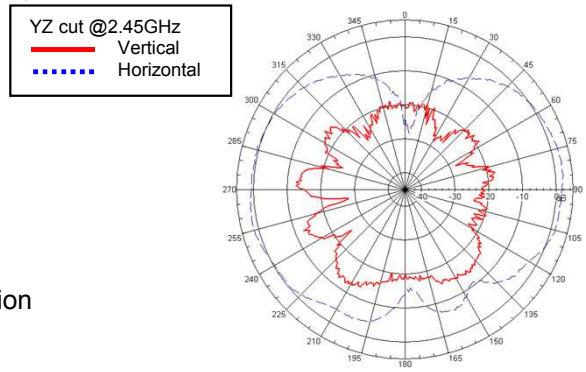


XZ-cut scanning direction





YZ-cut scanning direction



2.45 GHz High Gain SMD Chip Antenna **P/N 2450AT45A100**

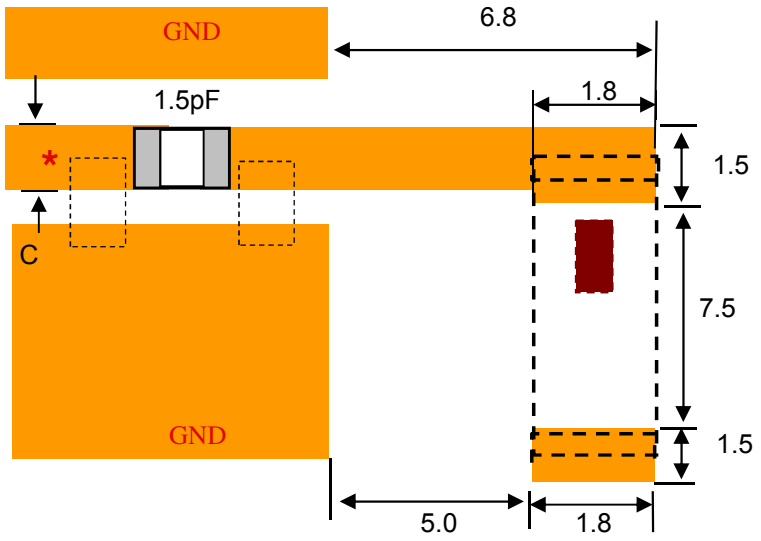
Detail Specification: 11/7/2016

Typical Electrical Specs for Mounting Considerations 2 - "Horizontal Orientation Type A" (T=25°C)			
Frequency Range	2400 - 2500 Mhz	**Peak Gain**	1.5 dBi typ. (XZ-V)
Return Loss	9.5 dB min.	**Average Gain**	0.0 dBi typ. (XZ-V)

Mounting Considerations 2 - "Horizontal Orientation Type A"

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

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



*These matching circuit values only apply to Johanson's evaluation board, they will be different on the client's PCB, see pages 5 and 10

EVB p/n: 2450AT45A100-EB2SMA

"C" Dimmension will depend on the width of the trace required for it to have a 50ohm characteristic impedance (i.e. coplanar waveguide theory)

Let us help you tune/optimize the antenna! Click on the link below

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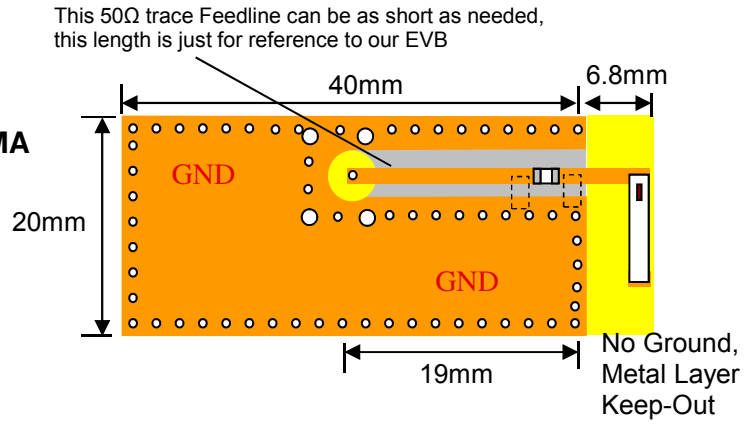
Typical Electrical Characteristics: Mounting Considerations 2 "Horizontal Orientation Type A" (T=25°C)

Test Board

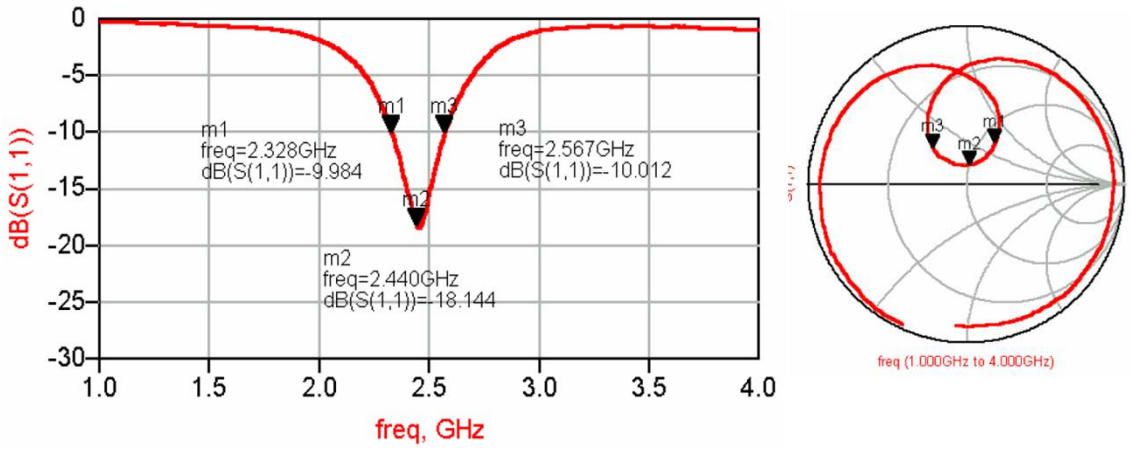
Orderable Evalu
p/n: 2450AT45A100-EB2SMA



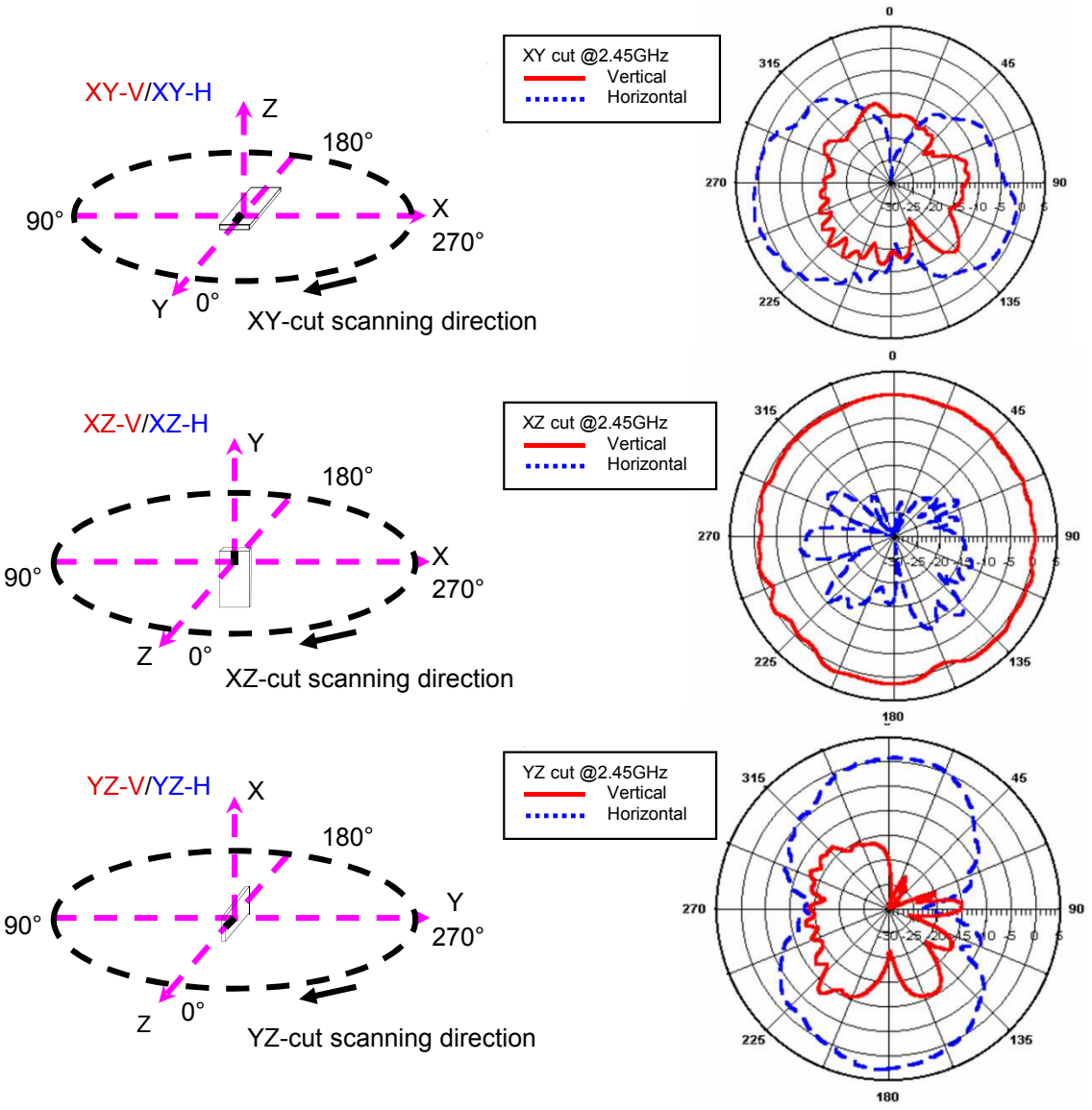
Note: It is recommended that the designer leave available slots for a "pi" (or shunt-series-shunt) network. The antenna matching network values above are used when antenna is monted on Johanson's evaluation board. The matching values on clinet's PCB will be different, go to: http://johansontechnology.com/tuning and see how to obtain the new values. If you need further help, contact our RF Applications Eng Team at: http://www.johansontechnology.com/ask-a-question

Return Loss

a) With Matching Circuit



Typical Radiation Patterns for Mounting Considerations 2 - "Horizontal Orientation Type A" (@25C)



2.45 GHz High Gain SMD Chip Antenna **P/N 2450AT45A100**

Detail Specification: 11/7/2016

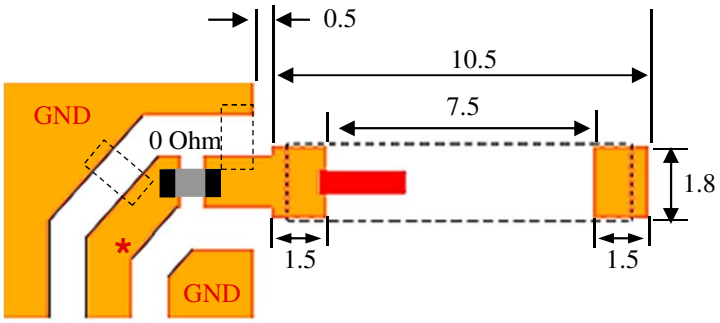
Typical Electrical Specs for Mounting Considerations 3 - "Horizontal Orientation Type B" (T=25°C)			
Frequency Range	2400 - 2500 Mhz	**Peak Gain**	1.3 dBi typ. (XZ-V)
Return Loss	9.5 dB min.	**Average Gain**	0.6 dBi typ. (XZ-V)

Mounting Considerations 3 - "Horizontal Orientation Type B"

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

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

Units in mm



EVB p/n:
2450AT45A100-EB3SMA

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: http://johansontechnology.com/tuning and see how to obtain the new values. If you need further help, contact our RF Applications Eng Team at: http://www.johansontechnology.com/ask-a-question

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Typical Electrical Characteristics Mounting Considerations 3 - "Horizontal Orientation Type B" (T=25°C)

Test Board
EVB p/n:
2450AT45A100-EB3SMA

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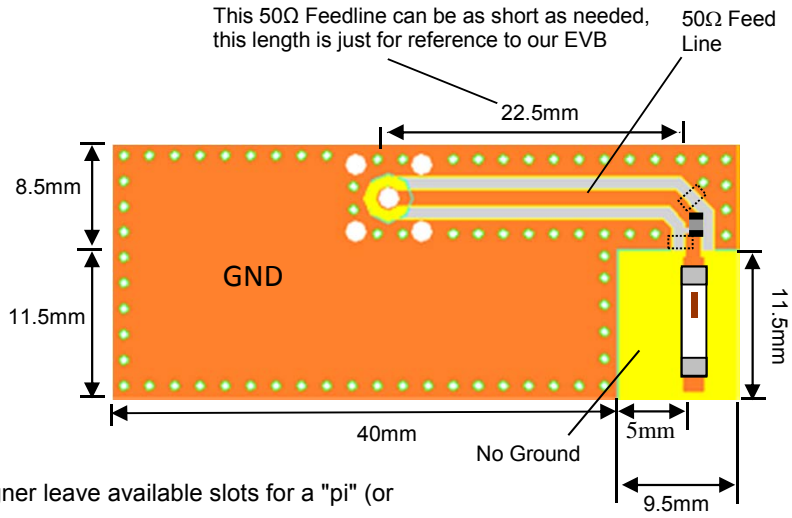
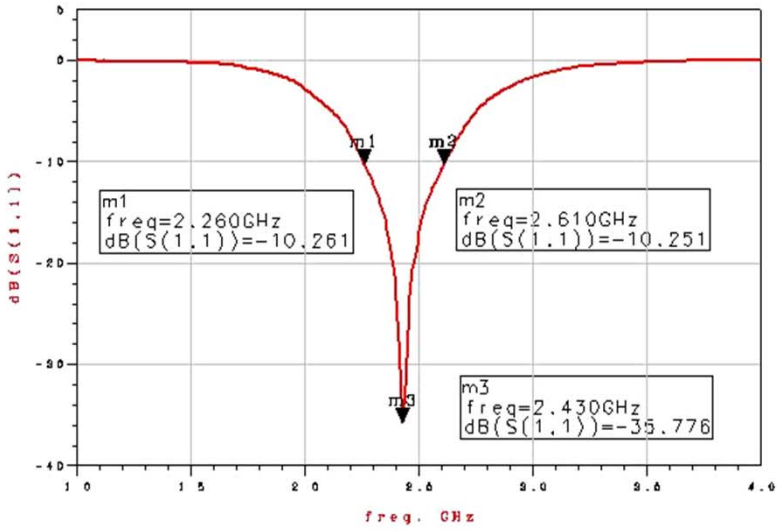
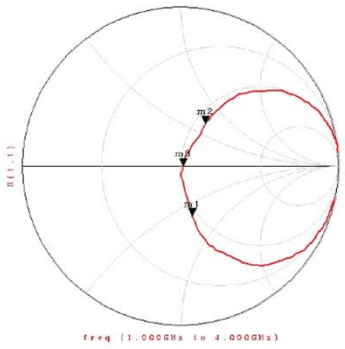
Let us help you design this antenna to your PCB and/or optimize your layout for best radiated performance. Send us a message by clicking on the link



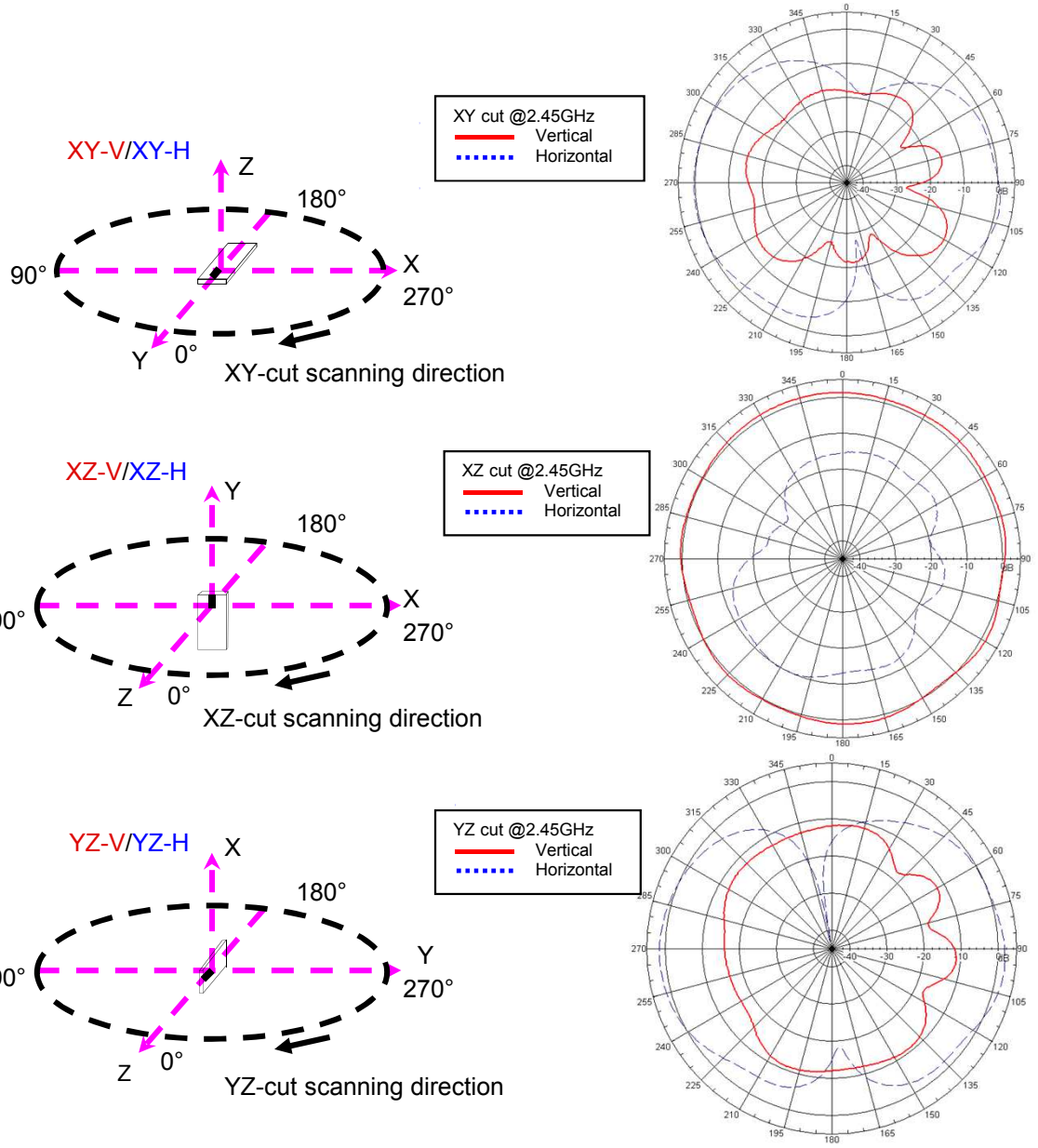
It is recommended that the designer leave available slots for a "pi" (or shunt-series-shunt) network

Return Loss





Typical Radiation Patterns for Mounting Considerations 3 - "Horizontal Orientation Type B" (@25C)



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More SMD Chip Antennas at:
www.johansontechnology.com/antennas

Antenna layout and tuning techniques (How to obtain the new antenna matching values)
www.johansontechnology.com/tuning

Packaging information
http://www.johansontechnology.com/tape-reel-packaging

Soldering Information
www.johansontechnology.com/ipcsoldering-profile

RoHS Compliance
www.johansontechnology.com/rohs-compliance

Recommended Storage Conditions and Shelf Life of unused product still on T&R or Bulk			
Temperature	+5C to +35°C	**Shelf Life**	18 months max.
Relative Humidity	45 to 75%		

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