

# "High Frequency Ceramic Solutions"

## 2450 MHz Small SMD Chip Antenna

P/N 2450AT42B100

Ground Clearance Requirements Minimized. This antenna was designed for corner or end-mounting

Detail Specification: 10/08/13

Page 1 of 4

### General Specifications

|                              |                                |                |              |
|------------------------------|--------------------------------|----------------|--------------|
| Part Number                  | 2450AT42B100                   |                |              |
| Frequency Range              | 2400 - 2500 Mhz                |                |              |
| Peak Gain                    | 0 dBi typ. (XZ-V)              |                |              |
| Average Gain                 | -1.5 dBi typ. (XZ-V)           |                |              |
| Return Loss                  | 9.5 dB min.                    |                |              |
| Impedance                    | 50 $\Omega$                    |                |              |
| Reel Quantity                | 2,000                          |                |              |
| Operating Temperature        | -40 to +85°C                   | Storage Period | -40 to +85°C |
| Recommended Storage Conditio | +5 ~ +35 °C, Humidity 45~75%RH | Power Capacity | 2W max. (CW) |



### Mechanical Dimensions

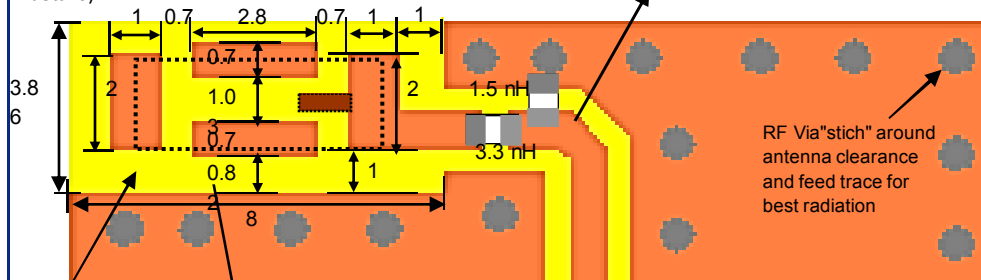
|    | In                       | mm                  |             |
|----|--------------------------|---------------------|-------------|
| L  | 0.197 $\pm$ 0.008        | 5.00 $\pm$ 0.20     | Top View    |
| W  | 0.079 $\pm$ 0.008        | 2.00 $\pm$ 0.20     |             |
| L1 | 0.102 $\pm$ 0.008        | 2.60 $\pm$ 0.20     | Bottom View |
| W1 | 0.020 $\pm$ 0.008        | 0.50 $\pm$ 0.20     |             |
| T  | 0.079 $\pm$ 0.004/-0.008 | 2.00 $\pm$ 0.1/-0.2 | Side View   |
| a  | 0.020 $\pm$ 0.012        | 0.50 $\pm$ 0.30     |             |

### Terminal Configuration

| No. | Function      |
|-----|---------------|
| 1   | Feeding Point |
| 2   | NC            |
| 3   | NC            |
| 4   | NC            |

### Mounting Considerations

Line width should be designed to match 50 $\Omega$  characteristic impedance (Grounded Co-Planar Waveguide), depending on PCB material and thickness. (The matching circuit and component values will be different on clients PCB layout, see notes below and go to page 2 for details).



Yellow area=Ground/Metal Clearance.

The "0.82mm" dimension is a min. requirement, if the designer can make this larger, the better radiation and gain will occur (i.e. 2.0 or 4.0mm)

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

We perform layout review as well as antenna tuning and characterization services. Go to page 2 for details.

Johanson Technology, Inc. reserves the right to make design changes without notice.

All sales are subject to Johanson Technology, Inc. terms and conditions.



[www.johansontechnology.com](http://www.johansontechnology.com)

4001 Calle Tecate • Camarillo, CA 93012 • TEL 805.389.1166 FAX 805.389.1821

Ver 2.1

2013 Johanson Technology, Inc. All Rights Reserved

# "High Frequency Ceramic Solutions"

## 2450 MHz Small SMD Chip Antenna

P/N 2450AT42B100

Detail Specification: 10/08/13

Page 2 of 4

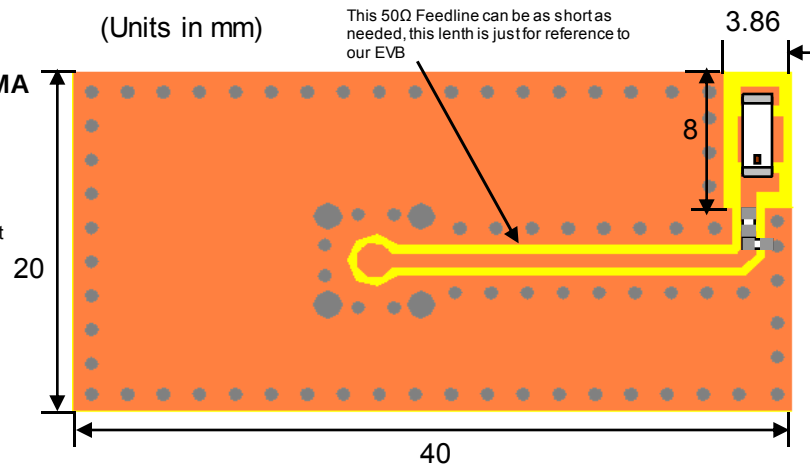
### Johanson Evaluation Board (orderable item)

#### Test Board:

P/N: 2450AT42B100-EB1SMA  
(orderable item)

#### To order, go to:

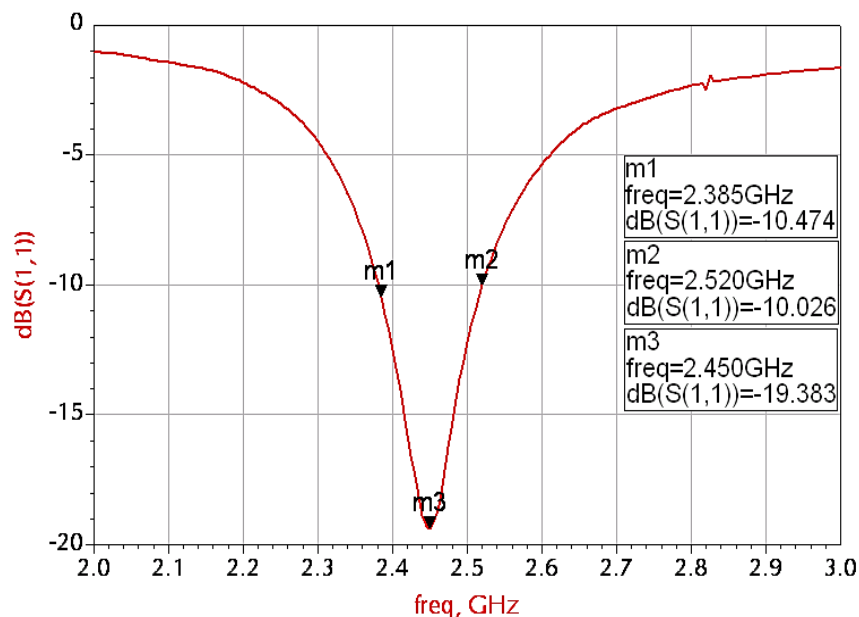
[www.johansontechnology.com/samplerequest](http://www.johansontechnology.com/samplerequest)



We offer antenna layout review, tuning, and characterization services, go to:  
[www.johansontechnology.com/ipcantennaservices](http://www.johansontechnology.com/ipcantennaservices) for details and instructions

### Typical Electrical Characteristics (T=25°C)

Return Loss  
(with  
matching)



Johanson Technology, Inc. reserves the right to make design changes without notice.

All sales are subject to Johanson Technology, Inc. terms and conditions.



4001 Calle Tecate • Camarillo, CA 93012 • TEL 805.389.1166 FAX 805.389.1821

Ver 2.1

2013 Johanson Technology, Inc. All Rights Reserved

[www.johansontechnology.com](http://www.johansontechnology.com)

# "High Frequency Ceramic Solutions"

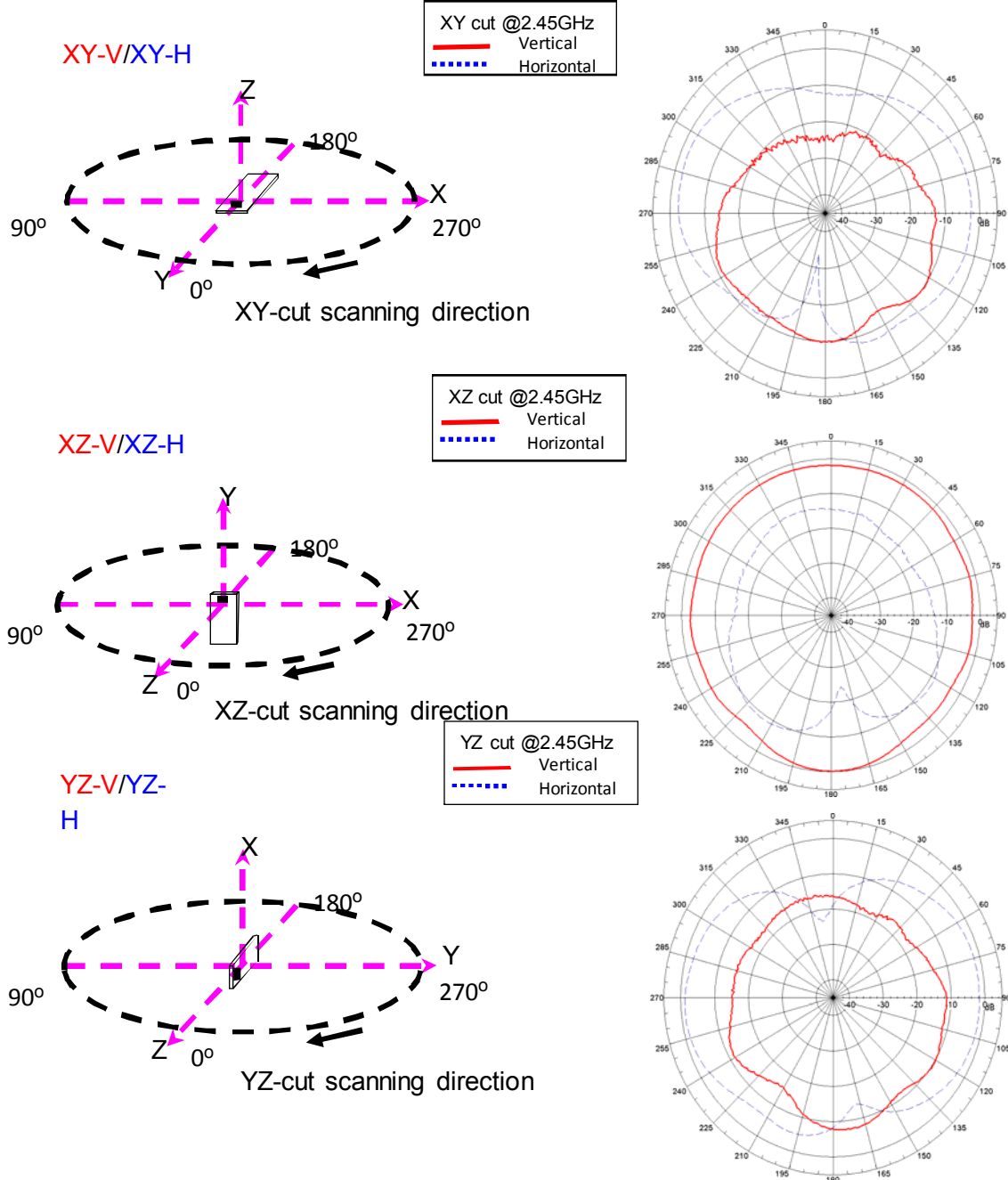
## 2450 MHz Small SMD Chip Antenna

Detail Specification: 10/08/13

P/N 2450AT42B100

Page 3 of 4

### Typical Electrical Characteristics (T=25°C) Radiation Patterns



Johanson Technology, Inc. reserves the right to make design changes without notice.

All sales are subject to Johanson Technology, Inc. terms and conditions.



4001 Calle Tecate • Camarillo, CA 93012 • TEL 805.389.1166 FAX 805.389.1821

Ver 2.1

2013 Johanson Technology, Inc. All Rights Reserved

[www.johansontechnology.com](http://www.johansontechnology.com)

# "High Frequency Ceramic Solutions"

## 2450 MHz Small SMD Chip Antenna

P/N 2450AT42B100

Detail Specification: 10/08/13

Page 4 of 4

### Part Number Explanation

|            |                                             |                                                                                                              |               |                                 |
|------------|---------------------------------------------|--------------------------------------------------------------------------------------------------------------|---------------|---------------------------------|
| P/N Suffix | Packing Style                               | Bulk (loose pieces)                                                                                          | Suffix = S    | eg. 2450AT42B100S               |
|            |                                             | T & R                                                                                                        | Suffix = E    | eg. 2450AT42B100E               |
|            |                                             | T & R (Reverse)                                                                                              | Suffix = R    | eg. 2450AT42B100R (MOQ Applies) |
|            |                                             | 100% Tin                                                                                                     | Suffix = None | eg. 2450AT42B100(S, E, R)       |
|            | Eval Board (1-port SMA antenna test boards) | 2450AT42B100-EB1SMA (Page 2)                                                                                 |               |                                 |
|            | More Details                                | <a href="http://www.johansontechnology.com/ipc-pn-explained">www.johansontechnology.com/ipc-pn-explained</a> |               |                                 |

### Storage Conditions and Shelf Life (On T&R or Bulk)

|                    |              |             |                |
|--------------------|--------------|-------------|----------------|
| Temperature:       | +5C to +35°C | Shelf Life: | 18 months max. |
| Relative Humidity: | 45 to 75%    |             |                |

### Packaging information

[www.johansontechnology.com/ipcpackaging.html](http://www.johansontechnology.com/ipcpackaging.html)

### Soldering Information

[www.johansontechnology.com/ipcsoldering-profile](http://www.johansontechnology.com/ipcsoldering-profile)

### Antenna layout and tuning techniques

[www.johansontechnology.com/tuning](http://www.johansontechnology.com/tuning)

### Antenna layout review, tuning, and characterization services

[www.johansontechnology.com/ipcantennaservices](http://www.johansontechnology.com/ipcantennaservices)

### RoHS Compliance

[www.johansontechnology.com/technical-notes/rohs-compliance.html](http://www.johansontechnology.com/technical-notes/rohs-compliance.html)

### MSL Info

[www.johansontechnology.com/technical-notes/msl-rating.html](http://www.johansontechnology.com/technical-notes/msl-rating.html)

Johanson Technology, Inc. reserves the right to make design changes without notice.

All sales are subject to Johanson Technology, Inc. terms and conditions.



[www.johansontechnology.com](http://www.johansontechnology.com)

4001 Calle Tecate • Camarillo, CA 93012 • TEL 805.389.1166 FAX 805.389.1821

Ver 2.1

2013 Johanson Technology, Inc. All Rights Reserved