

# "High Frequency Ceramic Solutions"

## Mini 2.45 GHz Antenna

Detail Specification: 7/18/2014

P/N 2450AT18A100

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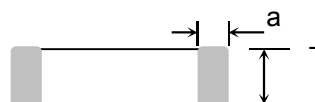
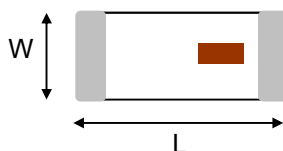
### General Specifications

|                       |                      |
|-----------------------|----------------------|
| Part Number           | 2450AT18A100         |
| Frequency Range       | 2400 - 2500 Mhz      |
| Peak Gain             | 0.5 dBi typ. (XZ-V)  |
| Average Gain          | -0.5 dBi typ. (XZ-V) |
| Return Loss           | 9.5 dB min.          |
| Input Power           | 2W max. (CW)         |
| Impedance             | 50 $\Omega$          |
| Operating Temperature | -40 to +125°C        |
| Reel Quantity         | 3,000                |



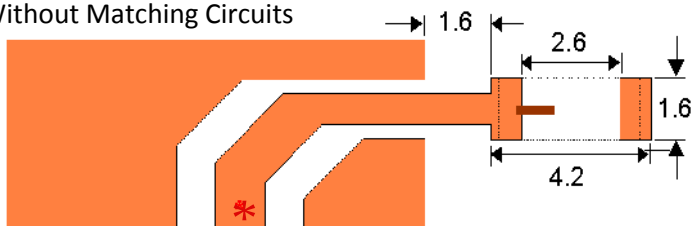
### Mechanical Dimensions

|   | In                       | mm                  |
|---|--------------------------|---------------------|
| L | 0.126 $\pm$ 0.008        | 3.20 $\pm$ 0.20     |
| W | 0.063 $\pm$ 0.008        | 1.60 $\pm$ 0.20     |
| T | 0.051 $\pm$ 0.004/-0.008 | 1.30 $\pm$ 0.1/-0.2 |
| a | 0.020 $\pm$ 0.012        | 0.50 $\pm$ 0.30     |

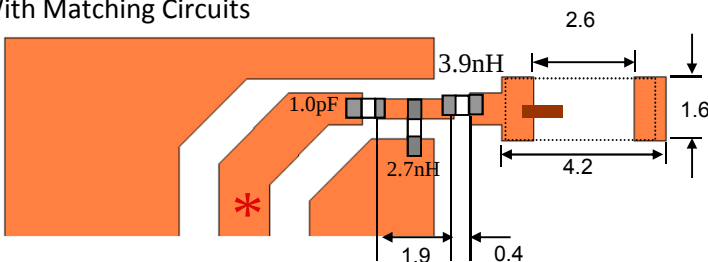


### Mounting Considerations

#### a) Without Matching Circuits



#### b) With Matching Circuits



Mount these devices with mark facing up. Units: mm

\* Line width should be designed to provide 50  $\Omega$  impedance matching characteristics.

### Terminal Configuration

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



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 and topology on client's PCB will be different.

Need our help tuning the antenna on your board? Contact our RF Applications Eng Team at:

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

Antenna Tuning services:

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

Need the layout file of the above? Contact us at: [www.johansontechnology.com/en/ask-a-technical-question.html](http://www.johansontechnology.com/en/ask-a-technical-question.html)

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

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

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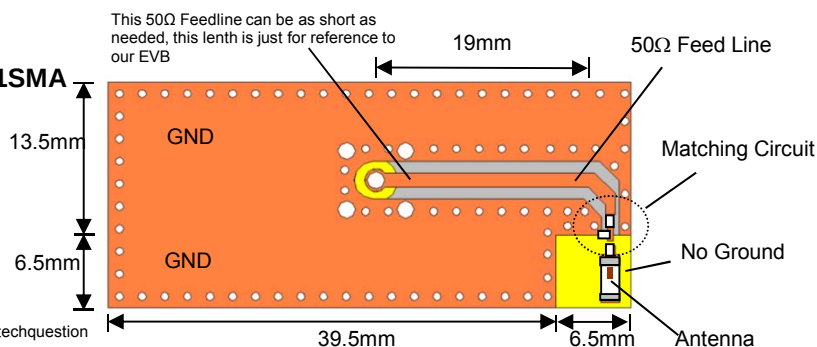
### Typical Electrical Characteristics (T=25°C)

#### Test Board:

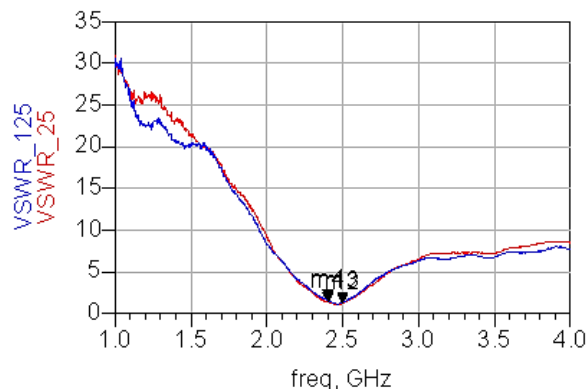
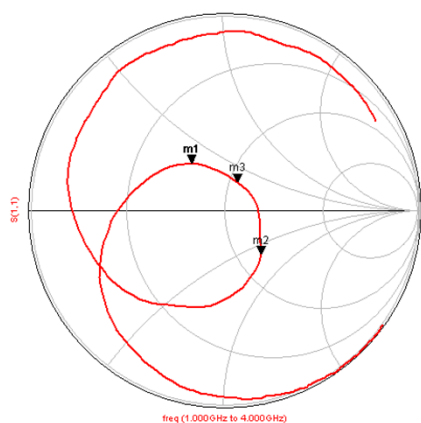
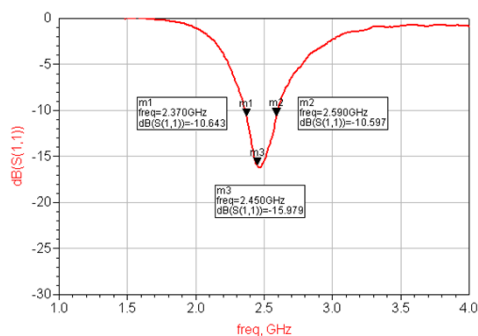
P/N: 2450AT18A100-EB1SMA  
(orderable item)

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:  
[www.johansontechnology.com/ipcantennaservices](http://www.johansontechnology.com/ipcantennaservices)  
and see how to obtain the new values. If you need further help, contact our RF Applications Eng Team at:

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



#### Return Loss with matching circuit @ +25C VSWR with matching circuit @ +25C and +125C



|                |
|----------------|
| m 1            |
| freq=2.400GHz  |
| VSWR_25=1.386  |
| m 2            |
| freq=2.500GHz  |
| VSWR_25=1.219  |
| m 4            |
| freq=2.400GHz  |
| VSWR_125=1.606 |
| m 3            |
| freq=2.500GHz  |
| VSWR_125=1.332 |

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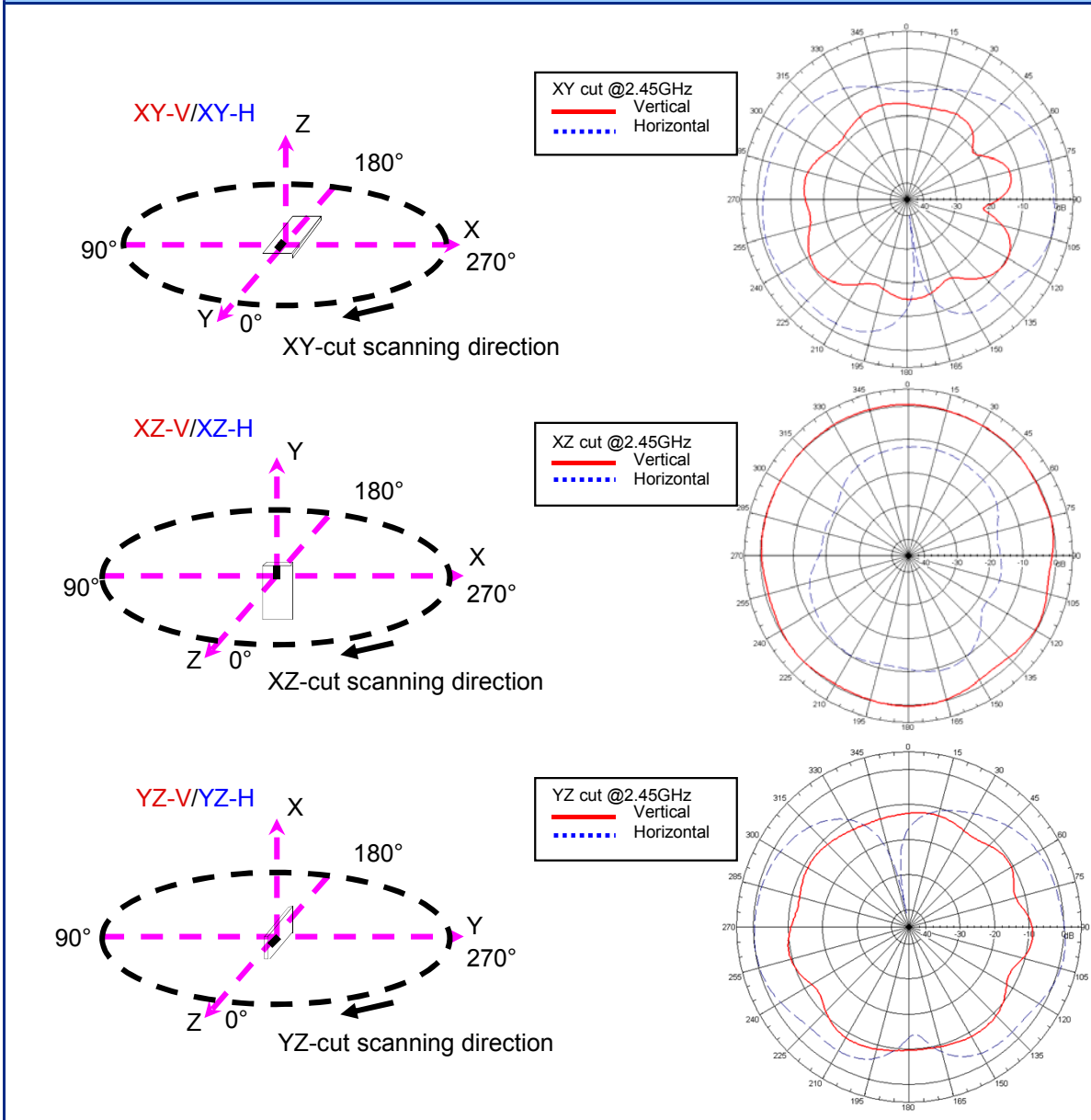
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### Typical Radiation Patterns at 2.45GHz (+25C)



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| Part Number Explanation |                                                         |                                              |                        |                                 |
|-------------------------|---------------------------------------------------------|----------------------------------------------|------------------------|---------------------------------|
| P/N Suffix              | Packaging Style                                         | Bulk (loose pieces)                          | Suffix = S             | Eg. 2450AT18A100S               |
|                         |                                                         | T & R                                        | Suffix = E             | Eg. 2450AT18A100E               |
|                         |                                                         | T & R (Reverse)                              | Suffix = R             | Eg. 2450AT18A100R (MOQ Applies) |
|                         | Termination style                                       | 100% Tin (RoHS)                              | Suffix = S/E/R         | Eg. 2450AT18A100(S, E, R)       |
|                         |                                                         | Tin / Lead                                   | Please consult Factory |                                 |
|                         | Evaluation Board(s)<br>(1-port SMA antenna test boards) | 2450AT18A100-EB1SMA (Page 2) Orderable item! |                        |                                 |

AEC-Q2000 qualification available after special p/n: 2450AT18A100-AEC order. MOQ of 24K PCS applies for AEC and allow 16 weeks for AEC report leadtime.

Would you like Johanson Technology's RF team to help you design and tune our antenna on your board? Click on the link below:

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

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

### 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)

### 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)

### Recommended Storage Condition and Max Shelf Life

[www.johansontechnology.com/ipcstorage-shelflife](http://www.johansontechnology.com/ipcstorage-shelflife)

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