

# "High Frequency Ceramic Solutions"

**2.4 GHz WLAN, Home RF, Bluetooth Antenna, 802.11 b/g**

**P/N 2450AT43B100**

**With Ground Clearance Requirements Minimized**

Detail Specification: 1/29/2013

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## General Specifications

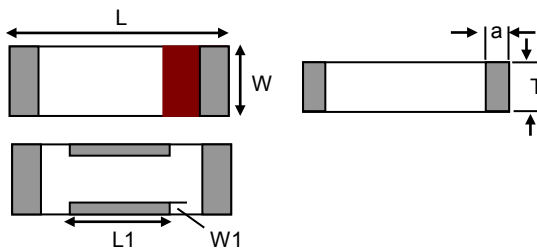
|                 |                      |                                                            |                                              |
|-----------------|----------------------|------------------------------------------------------------|----------------------------------------------|
| Part Number     | 2450AT43B100         | Input Power                                                | 2W max.                                      |
| Frequency Range | 2400 - 2500 Mhz      | Impedance                                                  | 50 $\Omega$                                  |
| Peak Gain       | 1.3 dBi typ. (XZ-V)  | Reel Quantity                                              | 1,000                                        |
| Average Gain    | -0.5 dBi typ. (XZ-V) | Operating Temperature                                      | -40 to +85°C                                 |
| Return Loss     | 9.5 dB min.          | Recommended Storage Conditions (for unused product on T&R) | +5 to +35°C, Humidity: 45-75%RH, 18 mos. Max |

## Part Number Explanation

|            |                   |                                                |                        |                          |
|------------|-------------------|------------------------------------------------|------------------------|--------------------------|
| P/N Suffix | Packaging Style   | Bulk                                           | Suffix = S             | Eg. 2450AT43B100S        |
|            |                   | T & R                                          | Suffix = E             | Eg. 2450AT43B100E        |
|            | Termination Style | 100% Tin                                       | Suffix = None          | Eg. 2450AT43B100(E or S) |
|            |                   | Tin / Lead                                     | Please consult Factory |                          |
|            | Evalaution Board  | 2450AT43B100-EB1SMA (comes with SMA connector) |                        |                          |

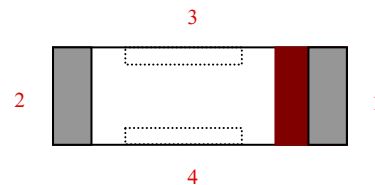
## Mechanical Dimensions

|    | In                | mm              |
|----|-------------------|-----------------|
| L  | 0.276 $\pm$ 0.008 | 7.00 $\pm$ 0.20 |
| W  | 0.079 $\pm$ 0.008 | 2.00 $\pm$ 0.20 |
| L1 | 0.102 $\pm$ 0.008 | 2.60 $\pm$ 0.20 |
| W1 | 0.020 $\pm$ 0.008 | 0.50 $\pm$ 0.20 |
| T  | 0.079 +.004/-.008 | 2.00 +0.1/-0.2  |
| a  | 0.020 $\pm$ 0.012 | 0.50 $\pm$ 0.30 |



## Terminal Configuration

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



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Ver 1.1

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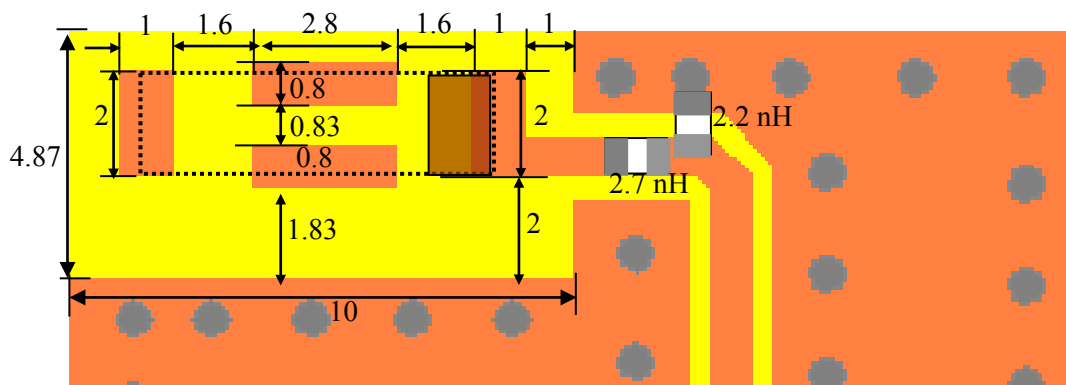
## Mounting and Layout Guidelines:

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

\* Antenna feed line width should be designed to provide 50  $\Omega$  impedance otherwise improper operation will occur

**Note 1:** Pins 3 & 4, although "NC", must be soldered to its PCB pads for proper electrical operation

### With Matching Circuits



JTI P/N for Matching Circuit:  
Inductor (2.2nH): L-07C2N2SV6T  
Inductor (2.7nH): L-07C2N7SV6T

(Matching circuit and component values will be different, depending on PCB layout)

**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. 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/en/ask-a-technical-question.html>

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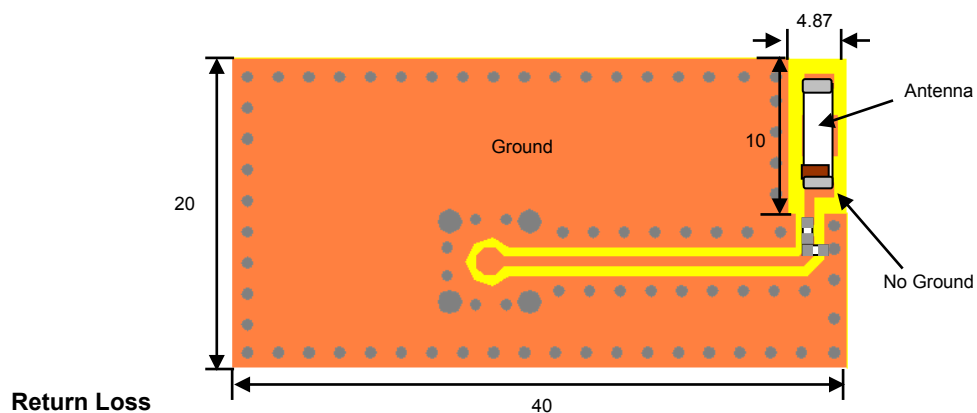
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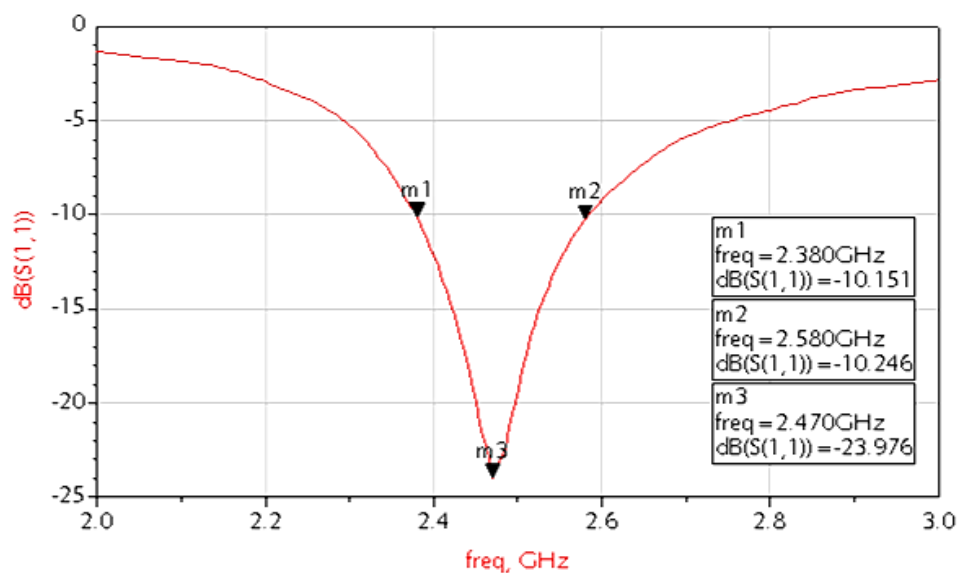
Detail Specification: 1/29/2013

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

Test Board used orderable p/n: 2450AT43B100-EB1SMA (comes with SMA connector)



Return Loss



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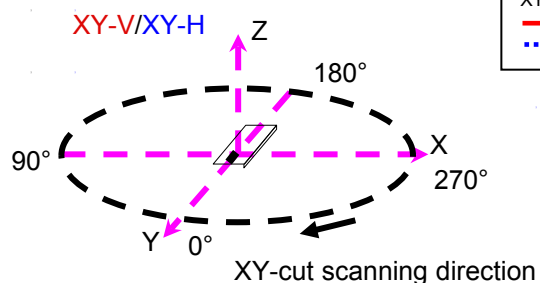
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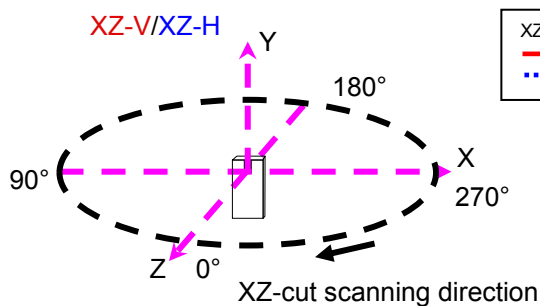
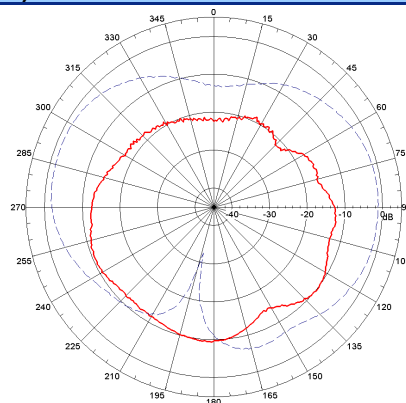
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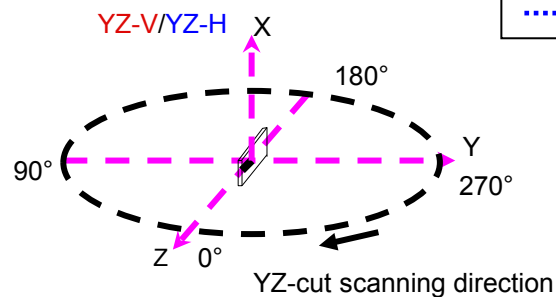
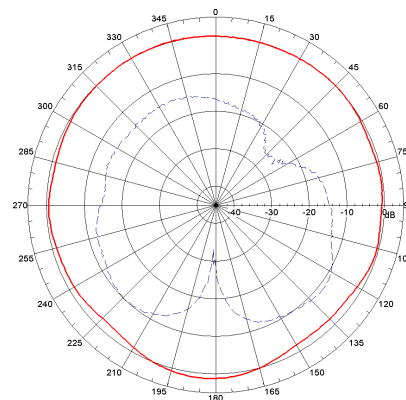
## Typical Electrical Characteristics/Radiation Patterns (T=25°C)



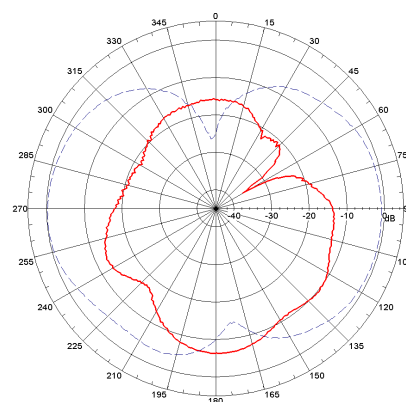
XY cut @2.45GHz  
— Vertical  
- - - Horizontal



XZ cut @2.45GHz  
— Vertical  
- - - Horizontal



YZ cut @2.45GHz  
— Vertical  
- - - Horizontal



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