2.4GHz Mini Antenna, SMT  

**General Specifications**

<table>
<thead>
<tr>
<th>Part Number</th>
<th>2450AT18A100</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency (MHz)</td>
<td>2400 - 2500</td>
</tr>
<tr>
<td>Avg. Rad Efficiency*</td>
<td>76%</td>
</tr>
<tr>
<td>Peak Gain (dBi typ.)</td>
<td>0.5</td>
</tr>
<tr>
<td>Average Gain (dBi typ.)</td>
<td>-0.5</td>
</tr>
<tr>
<td>Return Loss (dB)</td>
<td>9.5 min.</td>
</tr>
<tr>
<td>Impedance</td>
<td>50 Ω</td>
</tr>
<tr>
<td>Input Power</td>
<td>2 Watts max. (CW)</td>
</tr>
</tbody>
</table>

**Storage Period**  18 months max.  
**Storage Temperature**  -40 to +125°C  
**Operating Temperature**  -40 to +125°C  
**Reel Quantity**  3000

*Efficiency based on Johanson's standard evaluation board

**Part Number Explanation**

- **P/N Suffix**
  - Bulk (loose): Suffix = S  e.g. 2450AT18A100S
  - T & R: Suffix = E  e.g. 2450AT18A100E
  - 100% Tin: Suffix = E or S  e.g. 2450AT18A100(E or S)

- **Evaluation Board**  2450AT18A100-EBSMA (see page 2&3 for details)

**Mechanical Dimensions**

<table>
<thead>
<tr>
<th>L</th>
<th>0.126 ± 0.008</th>
<th>3.20 ± 0.2</th>
</tr>
</thead>
<tbody>
<tr>
<td>W</td>
<td>0.063 ± 0.008</td>
<td>1.60 ± 0.2</td>
</tr>
<tr>
<td>T</td>
<td>0.051 +0.004/-0.008</td>
<td>1.30 +0.1/-0.2</td>
</tr>
<tr>
<td>a</td>
<td>0.020 ± 0.012</td>
<td>0.50 ± 0.3</td>
</tr>
</tbody>
</table>

**Terminal Configuration**

<table>
<thead>
<tr>
<th>No.</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>FEED</td>
</tr>
<tr>
<td>2</td>
<td>NC</td>
</tr>
</tbody>
</table>

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2.4GHz Mini Antenna, SMT

P/N 2450AT18A100

Detail Specification: 7/9/2018

Mounting Considerations 1: Evaluation Board

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"High Frequency Ceramic Solutions"

JTI P/N for Matching Circuit: Cap
(1.0pF): 500R07S1R0BV4T
Inductor (2.7nH): L-07C2N7SV6T
Inductor (3.9nH): L-07C3N9SV6T

Units in mm

To order a pre-tuned 50Ω EVB with a female SMA connector click here: [www.johansontechnology.com/request-a-sample](http://www.johansontechnology.com/request-a-sample)

Reference p/n: 2450AT18A100-EBSMA
Mounting Considerations 1: Typical Electrical Performance (T=25°C)

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

<table>
<thead>
<tr>
<th>m1</th>
<th>freq=2.400GHz</th>
<th>VSWR_{25}=1.386</th>
</tr>
</thead>
<tbody>
<tr>
<td>m2</td>
<td>freq=2.500GHz</td>
<td>VSWR_{25}=1.219</td>
</tr>
<tr>
<td>m3</td>
<td>freq=2.400GHz</td>
<td>VSWR_{125}=1.606</td>
</tr>
<tr>
<td>m4</td>
<td>freq=2.500GHz</td>
<td>VSWR_{125}=1.332</td>
</tr>
</tbody>
</table>

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## Mounting Considerations 1: Antenna Performance

Typical 2D radiation patterns @ 2.44GHz

### YZ-plane

![YZ-plane](image)

### XZ-plane

![XZ-plane](image)

### XY-plane

![XY-plane](image)
2.4GHz Mini Antenna, SMT

Antenna tuning, optimization, and validation services:
www.johansontechnology.com/ipc-antenna-services

For more antennas and to download measured S-parameters, go to:
www.johansontechnology.com/antennas

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For layout review contact our Applications Team at:
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We provide 2 free layout reviews and if you need us to tune and characterize the antenna on your product (inside anechoic chamber) we can do that too. Small lab fee may apply for the latter.

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