



# High Frequency Ceramic Solutions

AEC-Q200 Qualification Available

**2.45 GHz SMD Antenna, EIA 1206, Detuning resilient, Edge Mount Design** **P/N 2450AT18D0100**

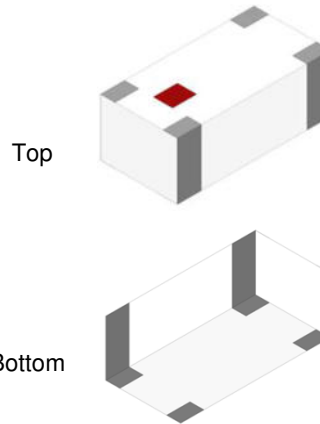
Detail Specification: 5/26/2021

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*Let us help you with the antenna design, optimization, and tuning!*

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| General Specifications   |   |
|--|---|
| <b>Part Number</b>   | 2450AT18D0100E  |
| <b>Frequency (GHz)</b>   | 2.4 - 2.5   |
| <b>Peak Gain (dBi)</b>   | 1.5 typ. (XZ-total)                                   |
| <b>Average Gain (dBi)</b>  | -1.0 typ. (XZ-total)                                  |
| <b>Radiated Efficiency<sup>1</sup></b>   | 72%   |
| <b>Return Loss (dB)</b>  | 10 min.   |
| <b>Impedance (Ω)</b>   | 50  |
| <b>Input Power (W)</b>   | 3 max. (CW)   |
| <b>Operating Temperature</b>   | -40 to +125°C   |
| <b>Recommended Storage Conditions and Period for unused Product on T&amp;R</b> | +5 to +35°C<br>Humidity 45 - 75% RH<br>18 months max. |
| <b>Reel Quantity (pcs./reel)</b>   | 3,000   |



<sup>1</sup>Efficiency measured on Johanson's evaluation board PN 2450AT18D0100-EB1SMA

| Part Number Explanation |                         |                      |               |                            |
|-------------------------|-------------------------|----------------------|---------------|----------------------------|
| <b>P/N Suffix</b>       | <b>Packing Style</b>    | Bulk (loose pcs.)    | Suffix = S    | e.g. 2450AT18D0100S        |
|                         |                         | T & R                | Suffix = E    | e.g. 2450AT18D0100E        |
|                         |                         | 100% Tin             | Suffix = None | e.g. 2450AT18D0100(E or S) |
|                         | <b>Evaluation Board</b> | 2450AT18D0100-EB1SMA |               |                            |

| Mechanical Dimensions |                       |                  |
|-----------------------|-----------------------|------------------|
|                       | In                    | mm               |
| <b>L</b>              | 0.126 ± 0.008         | 3.20 ± 0.2       |
| <b>W</b>              | 0.063 ± 0.008         | 1.60 ± 0.2       |
| <b>T</b>              | 0.047 ± 0.004         | 1.20 ± 0.1       |
| <b>a</b>              | 0.012 +0.004 / -0.008 | 0.30 +0.1 / -0.2 |
| <b>b</b>              | 0.020 ± 0.008         | 0.50 ± 0.2       |

| Terminal Configuration |            |            |
|------------------------|------------|------------|
| No.                    | Function 1 | Function 2 |
| 1                      | FEED       | GND        |
| 2                      | GND        | GND        |
| 3                      | GND        | GND        |
| 4                      | GND        | FEED       |

Function 1: Antenna fed from left  
Function 2: Antenna fed from right

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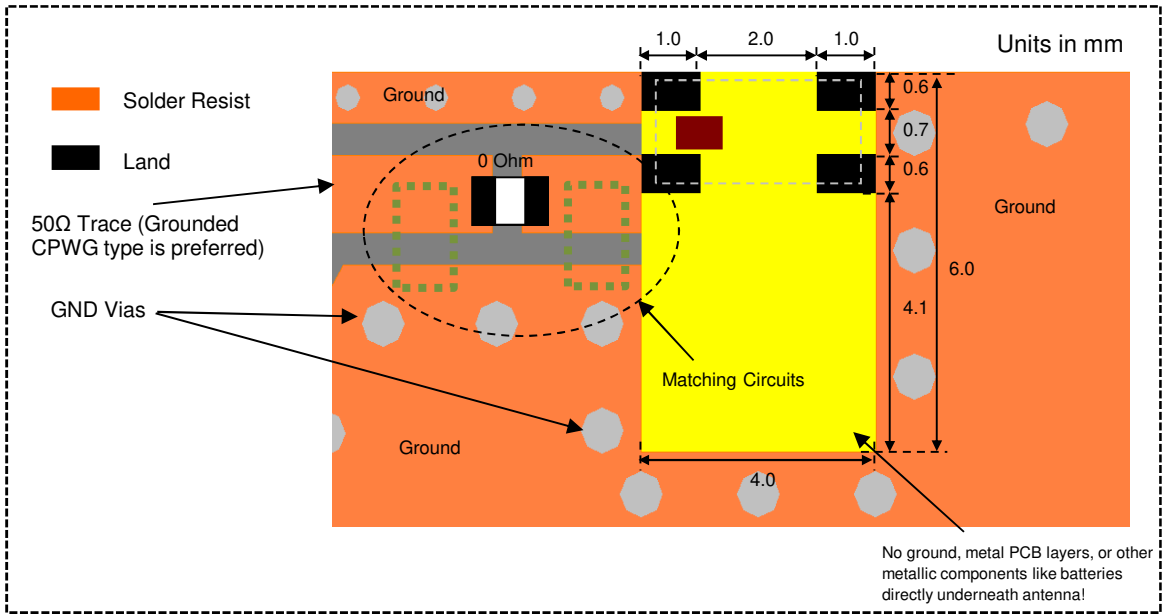
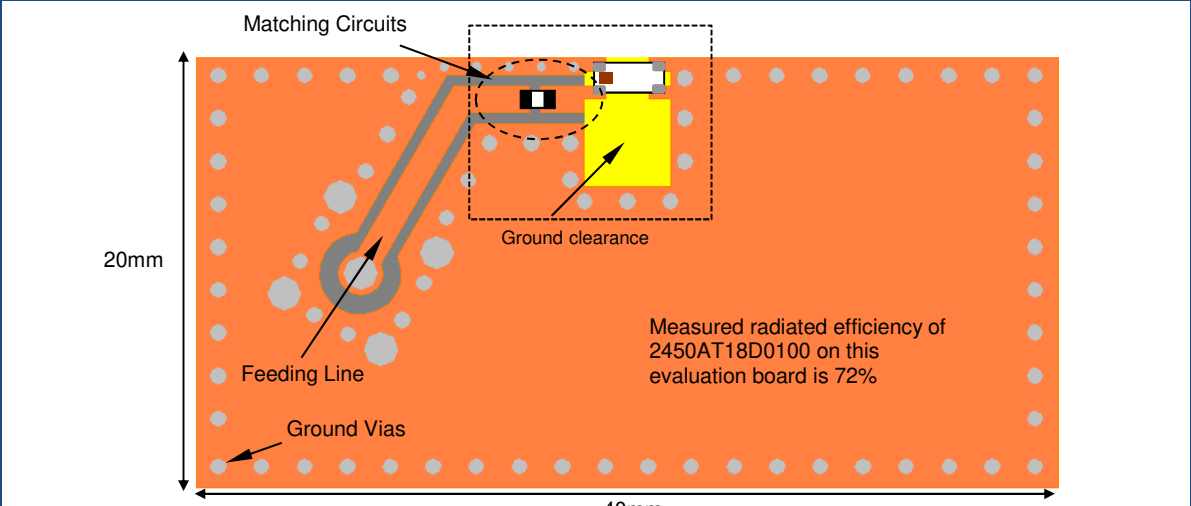
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## Mounting Considerations 1: Evaluation Board (Standard Layout)



To order a pre-tuned 50Ω EVB with a female SMA connector click here:

<https://www.johansontechnology.com/request-a-sample>

Reference p/n: 2450AT18D0100-EB1SMA

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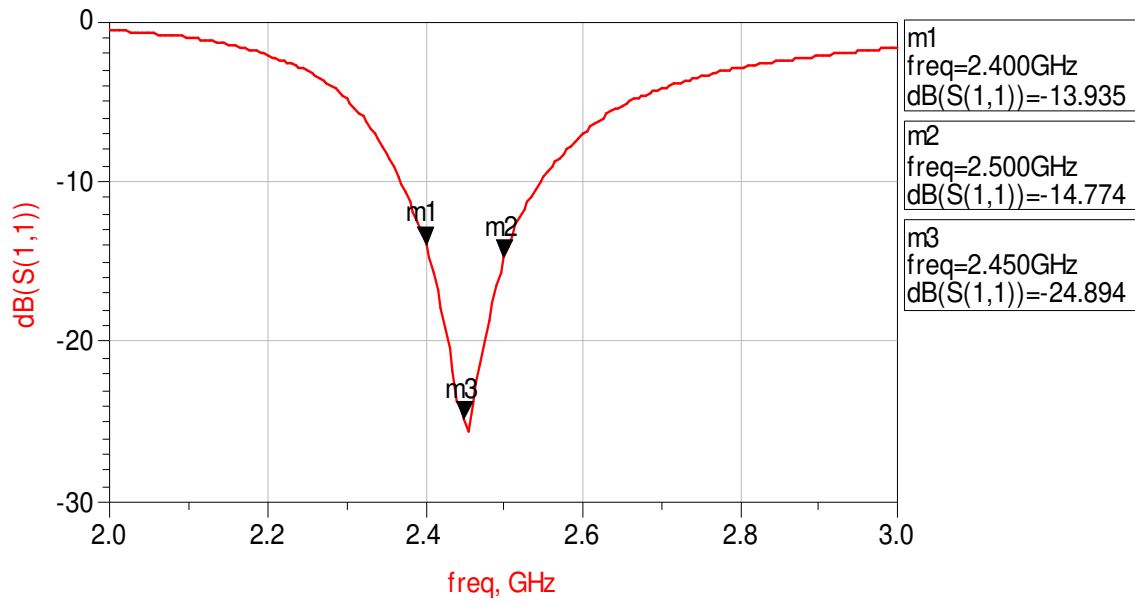


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**2.45 GHz SMD Antenna, EIA 1206, Detuning resilient, Edge Mount Design** **P/N 2450AT18D0100**  
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## Mounting Considerations 1: Electrical Performance @25°C

Measured Return Loss



Would you like the antenna layout? Have antenna tuning issues?  
Please contact us if you have any questions regarding the implementation of this antenna in your PCB's layout. We'll be happy to guide you to maximize the antenna's performance.  
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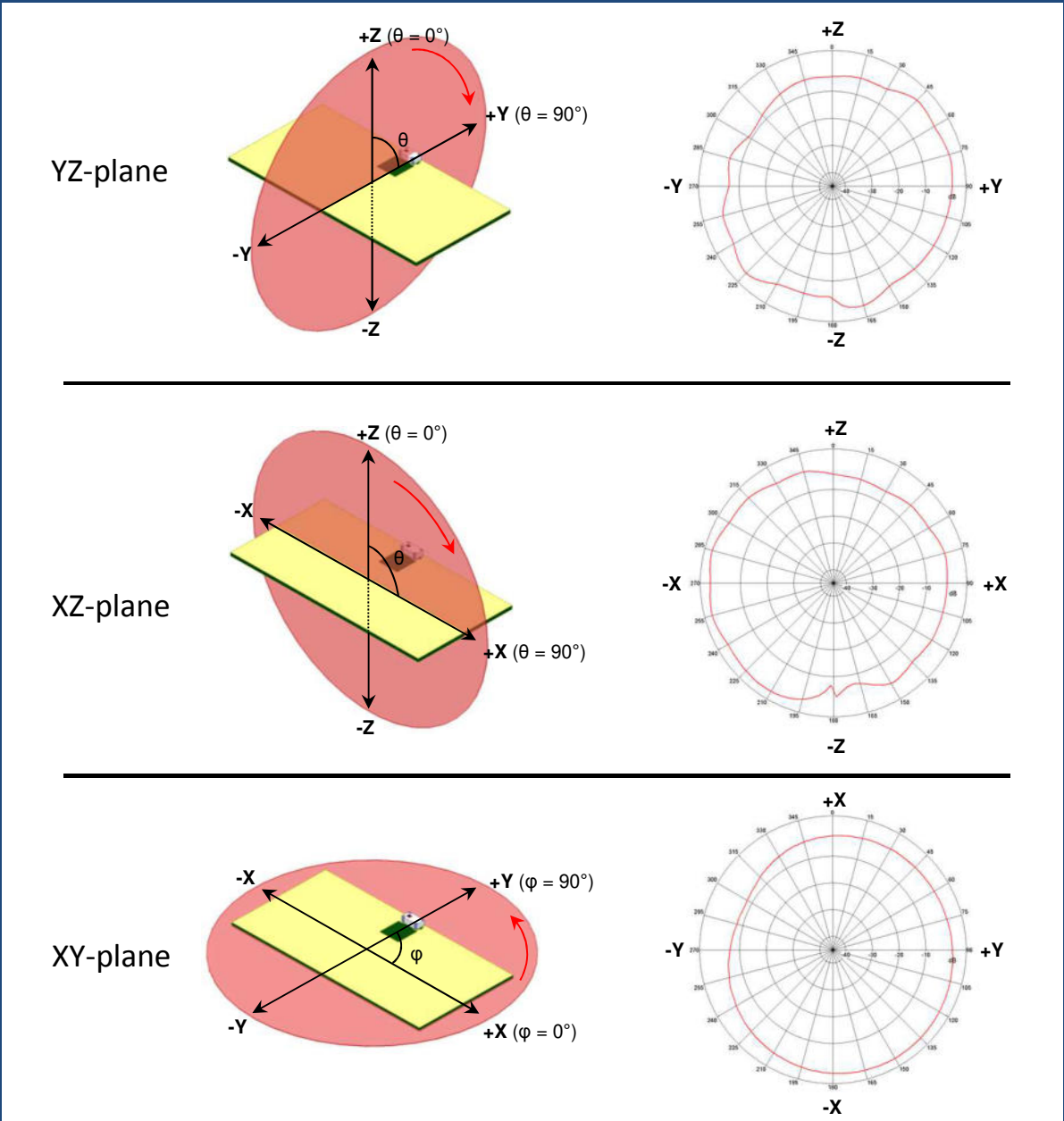


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## Mounting Considerations 1: Typical 2D radiation patterns @ 2.44GHz



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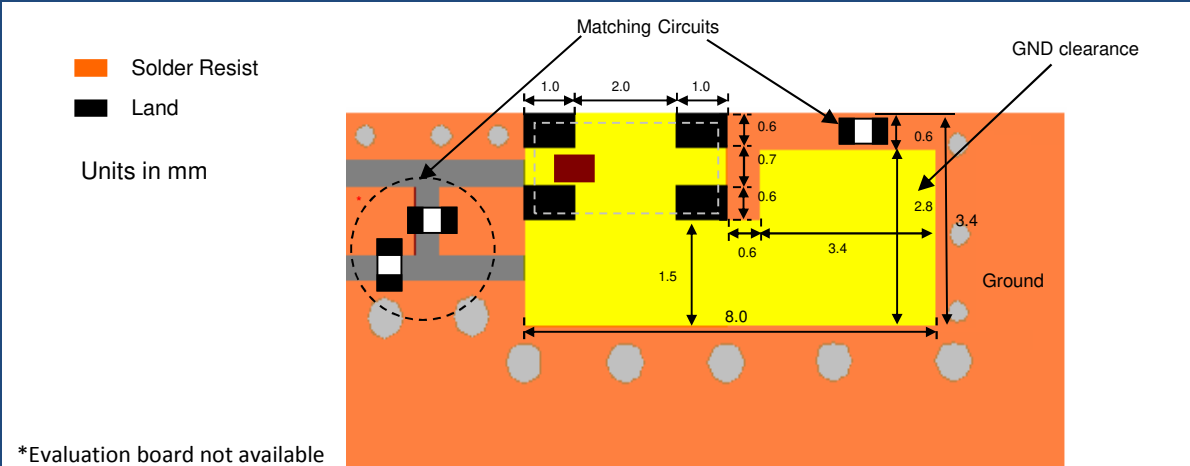


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|  |                          |
|--|--------------------------|
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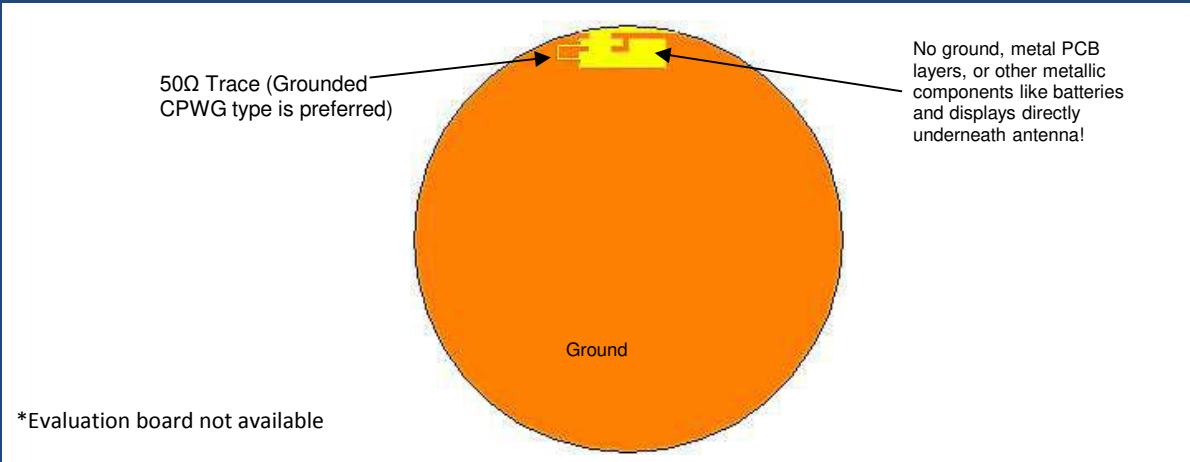
## Mounting Considerations 2: Small Clearance or "Thin edge" Applications\*

| Frequency (GHz) | Peak Gain (dBi) | Average Gain (dBi) | Radiated Efficiency (%) |
|-----------------|-----------------|--------------------|-------------------------|
| 2.45            | 0.3 (XZ-plane)  | -3.6 (XZ-plane)    | 66                      |



Want the layout file of this example? Send us a message at:  
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## Mounting Considerations 3: "Thin edge" application on circular PCB



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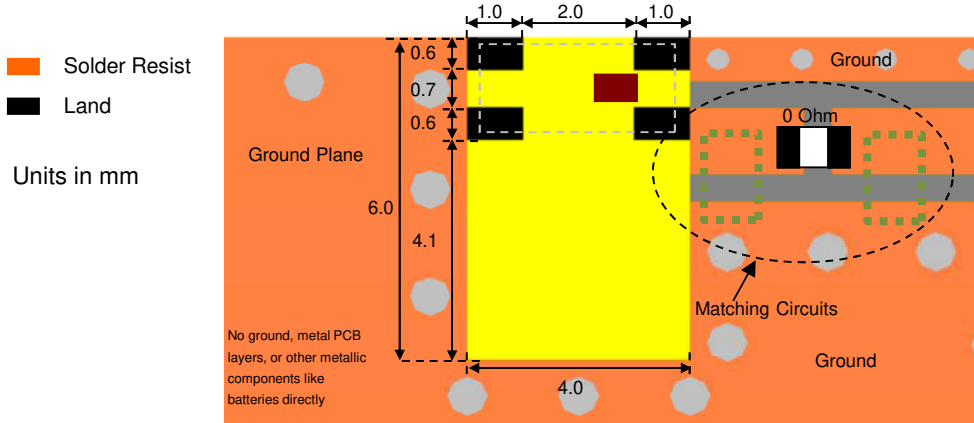


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## Mounting Considerations 4: Fed from Right Side\*

(Feeding the antenna from the right will have no impact on antenna performance)



\*Evaluation board not available

Would you like the layout file of the above? Have antenna tuning issues?  
Please contact us if you have any questions regarding the implementation of this antenna in your PCB's layout. We'll be happy to guide you to maximize the antenna's performance.

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**Antenna tuning, optimization, and validation services:**

<https://www.johansontechnology.com/ipc-antenna-services>

**For more antennas and to download measured S-parameters, go to:**

<https://www.johansontechnology.com/antennas>

**Soldering Information**

<https://www.johansontechnology.com/ipcsoldering-profile>

**MSL Info**

<https://www.johansontechnology.com/msl-rating>

**Packaging Information**

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**RoHS Compliance**

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**Recommended Storage Condition and Max Shelf Life**

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