

High Frequency Ceramic Solutions

2.45 GHz SMD Antenna, EIA 1210, Detuning resilient, Edge Mount Design, AEC-Q200 Qualified

P/N 2450AT18D0100E-AEC

Detail Specification: 3/26/2019

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

General Specifications

Part Number	2450AT18D0100E-AEC
Frequency (GHz)	2.4 - 2.48
Peak Gain (dBi)	1.5 dBi
Average Gain (dBi)	-1.0 dBi
Radiated Efficiency ¹	72%
Return Loss (dB)	10 min.
Impedance (Ω)	50
Input Power (W)	2 max. (CW)
Operating Temperature	-40 to +125°C



Recommended Storage Conditions and Period for unused T&R Product

+5 to +35°C
Humidity 45 - 75% RH
18 months max.

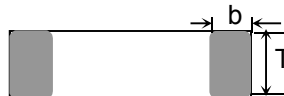
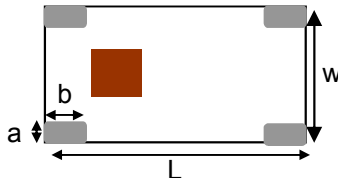
¹Efficiency measured on Johanson's evaluation board PN 2450AT18D0100-EB1SMA

Part Number Explanation

P/N Suffix	Packing Style	Bulk (loose)	Suffix = S	e.g. 2450AT18D0100S-AEC
		T&R	Suffix = E	e.g. 2450AT18D0100E-AEC
		100% Tin	Suffix = E or S	e.g. 2450AT18D0100(E or S)-AEC
	Evaluation Board	2450AT18D0100-EB1SMA		

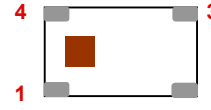
Mechanical Dimensions

	in	mm
L	0.126 ± 0.008	3.20 ± 0.2
W	0.063 ± 0.008	1.60 ± 0.2
T	0.047 ± 0.004	1.20 ± 0.1
a	0.012 +0.004 / -0.008	0.30 +0.1 / -0.2
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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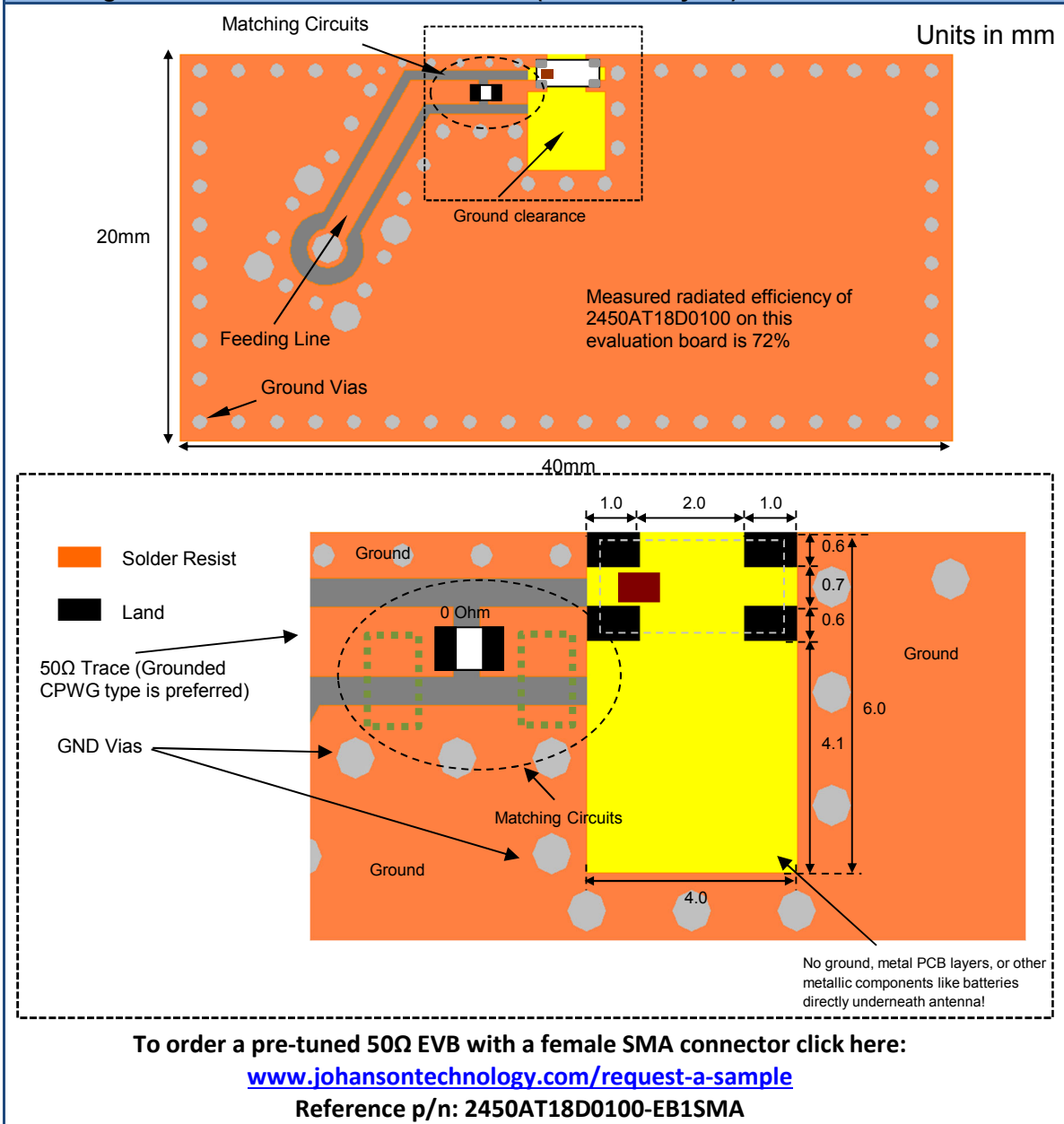
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Mounting Considerations 1: Evaluation Board (Standard Layout)



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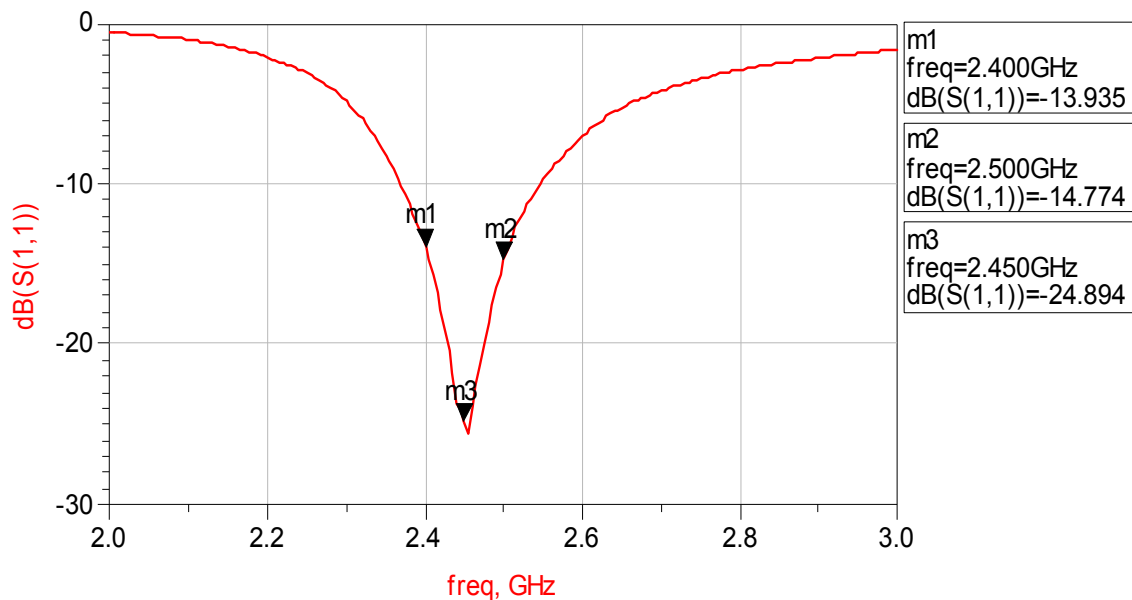
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Mounting Considerations 1: Electrical Performance @25°C

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.

Contact our applications engineers at:

www.johansontechnology.com/ask-a-question

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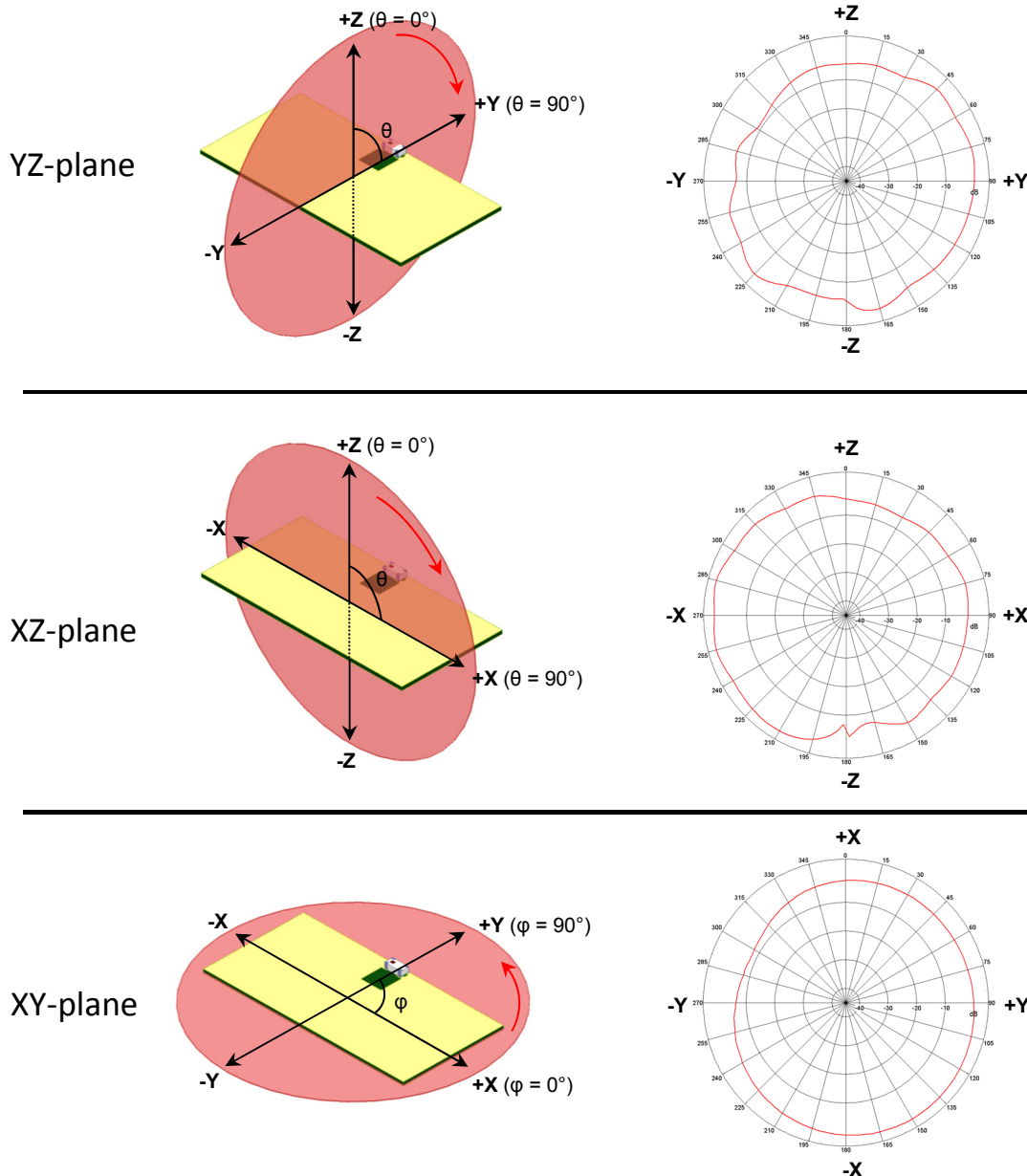
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Mounting Considerations 1: Typical 2D radiation patterns @ 2.44GHz



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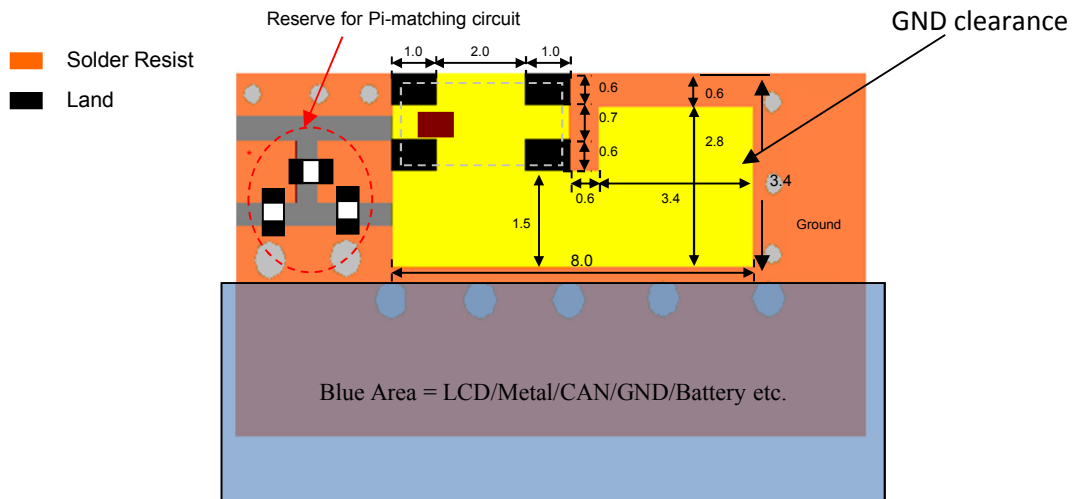
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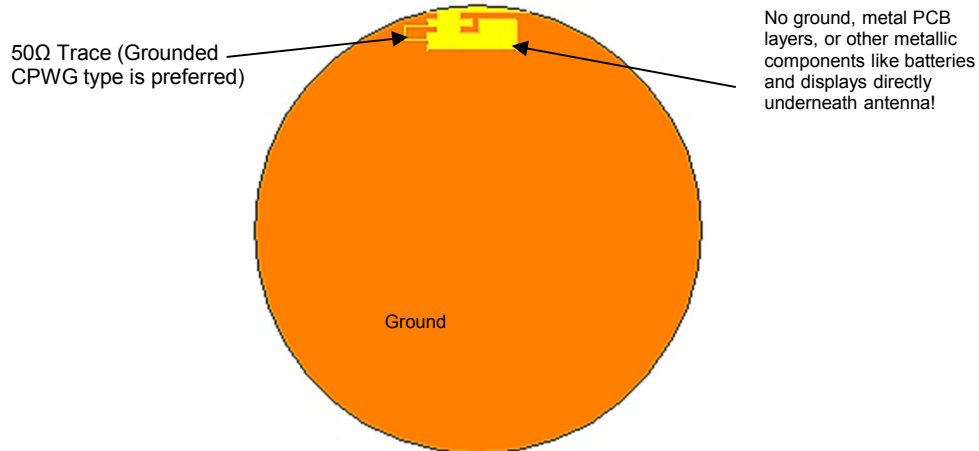
Mounting Considerations 2: Small Clearance or "Thin edge" Applications*



*Evaluation board not available

Units in mm

Mounting Considerations 3: "Thin edge" application on circular PCB



50Ω Trace (Grounded CPWG type is preferred)

No ground, metal PCB layers, or other metallic components like batteries and displays directly underneath antenna!

Ground

Want the layout file of this example? Send us a message at:

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*Evaluation board not available

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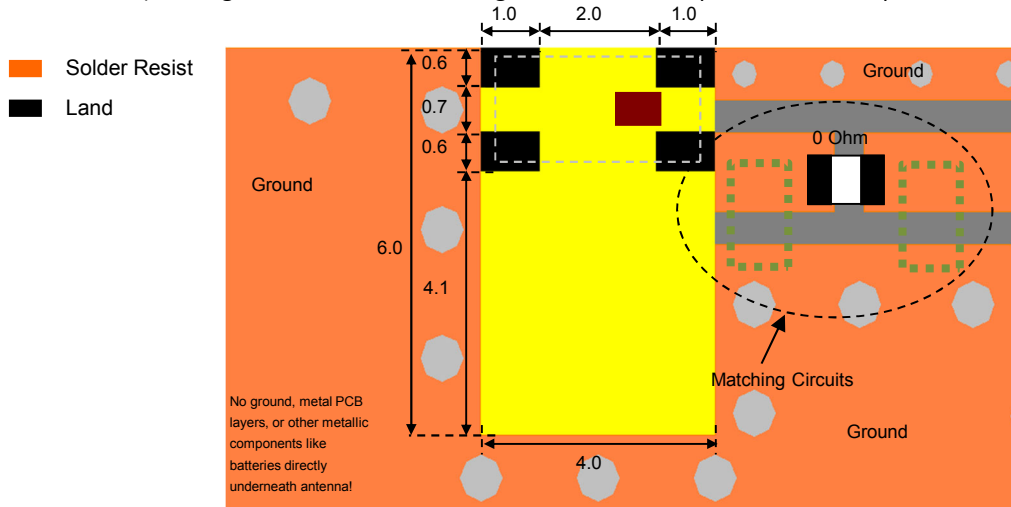
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Mounting Considerations 4: Fed from Right Side*

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



Units in mm

*Evaluation board not available

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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

<https://www.johansontechnology.com/tape-reel-packaging>

For layout review contact our applications team at:

<https://www.johansontechnology.com/ask-a-question>

RoHS Compliance

<https://www.johansontechnology.com/rohs-compliance>

Need help designing the antenna in? Use our antenna design services!

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

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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