



**THE DATASHEET OF  
7000AT18A1600002E**



# High Frequency Ceramic Solutions

7GHz Mini UWB Antenna, AEC-Q200 Qualified

P/N 7000AT18A1600E-AEC

Detail Specification: 9/13/2021

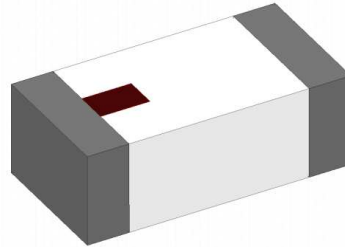
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Let us help you with the antenna design, optimization, and tuning!

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

## General Specifications

Part Number	7000AT18A1600E-AEC
Frequency (MHz)	6200 - 8240
Avg. Rad Efficiency	82%
Peak Gain (dBi)	2.0 typ.
Average Gain (dBi)	-0.5 typ.
Return Loss (dB)	9.5 min.
Impedance ( $\Omega$ )	50
Power Capacity (W)	3 max. (CW)



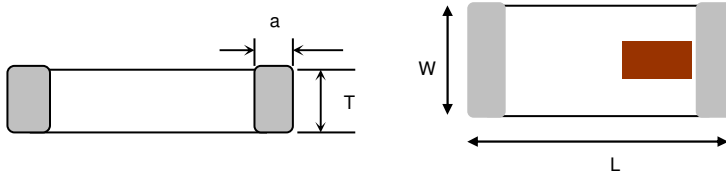
Recommended Storage Conditions and Period for unused Product onT&R	+5 to +35°C Humidity 45 - 75% RH 18 months max.
Operating Temperature	-40 to +105°C
Reel Quantity (pcs./reel)	3,000

## Part Number Explanation

P/N Suffix	Packing Style	Bulk (loose pcs.)	Suffix = S	e.g. 7000AT18A1600S-AEC
		T & R	Suffix = E	e.g. 7000AT18A1600E-AEC
		100% Tin	Suffix = E or S	e.g. 7000AT18A1600(E or S)-AEC
	Evaluation Board	7000AT18A1600-EB1SMA (Pre-tuned with SMA connector)		

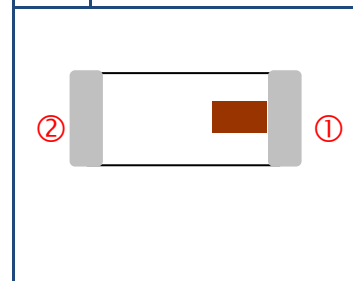
## Mechanical Dimensions

	In	mm
L	0.126 $\pm$ 0.008	3.20 $\pm$ 0.2
W	0.063 $\pm$ 0.008	1.60 $\pm$ 0.2
T	0.051 +0.004 / -0.008	1.30 +0.1 / -0.2
a	0.020 $\pm$ 0.012	0.50 $\pm$ 0.3



## Terminal Configuration

No.	Function
1	FEED
2	NC



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# High Frequency Ceramic Solutions

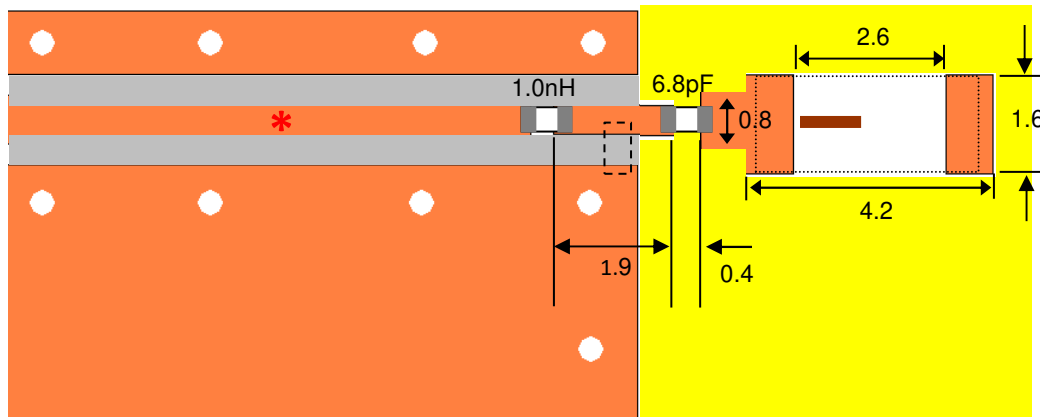
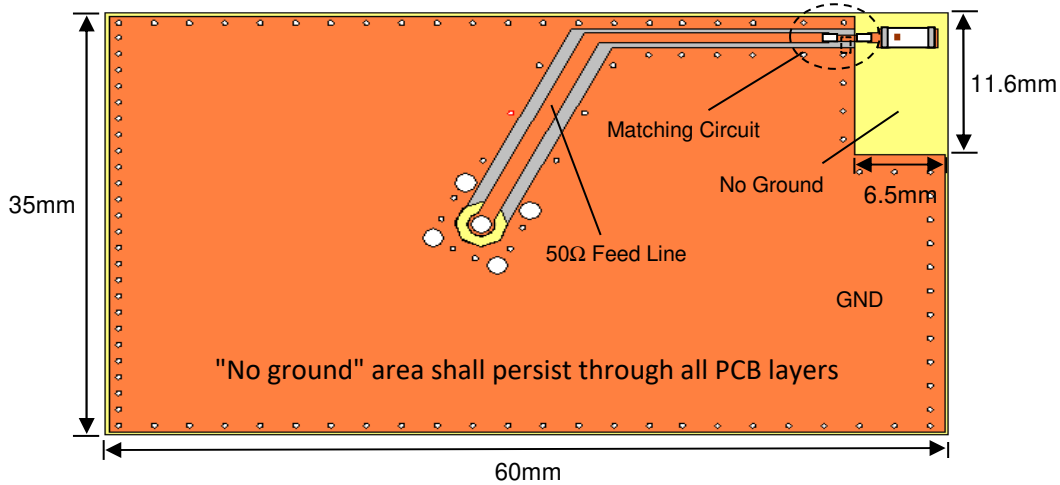
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## Mounting Considerations 1



\*Line width should be designed to match 50ohm characteristic impedance, depending on PCB material and thickness. A coplanar waveguide trace is recommended for best results.

It is recommended that the designer leave available slots for a "T" (series-shunt-series) network. These particular antenna matching values are used when antenna is mounted on Johanson's evaluation board.

The matching values on client's PCB will be different, just leave them empty until final assembly, then tune.

Want to learn how to tune or want us to tune for you? Go to: <https://www.johansontechnology.com/ask-a-question>

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

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

Reference p/n: 7000AT18A1600-EB1SMA

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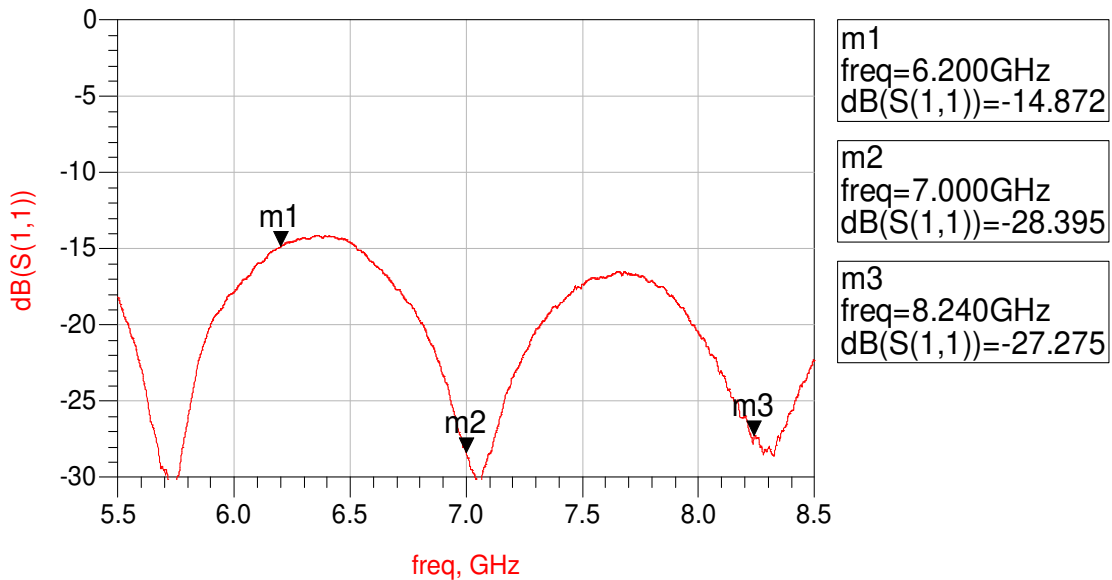
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## Typical Electrical Characteristics (T=25 °C)

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:

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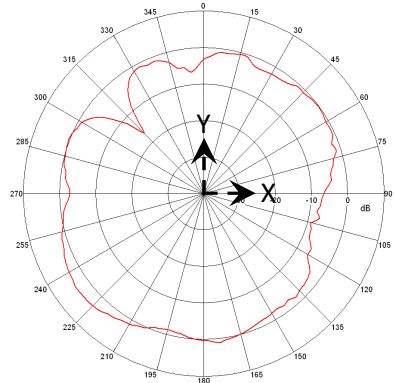
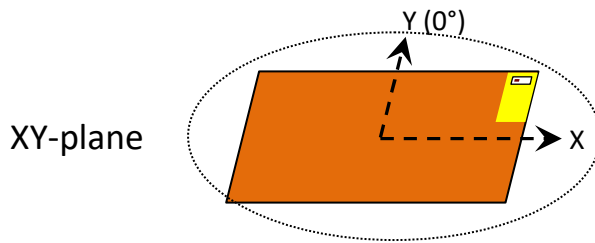
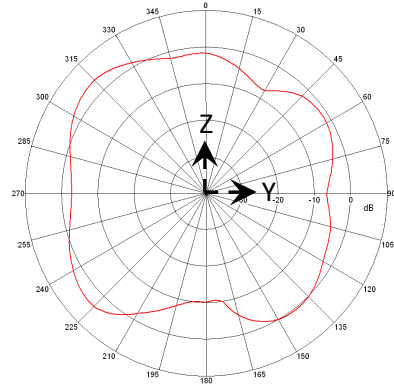
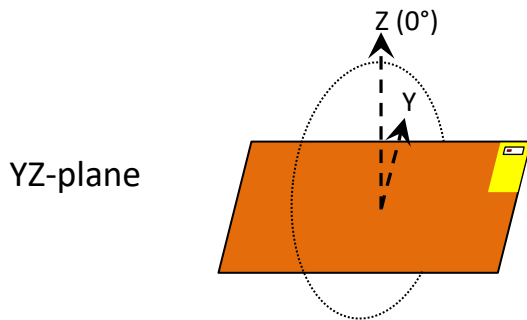
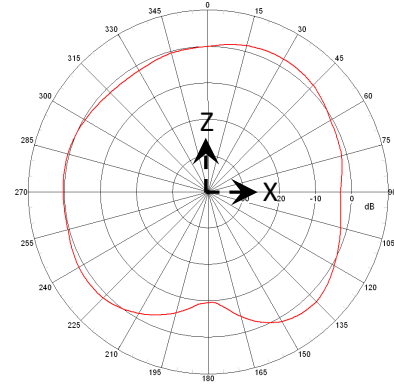
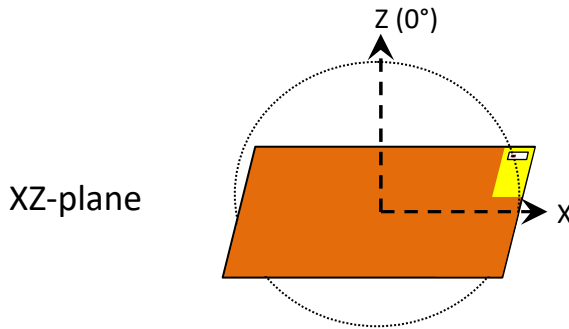
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## Typical Radiation Patterns (T=25 °C)

Typical 2D radiation patterns @ 7.0GHz



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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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