# High Frequency Ceramic Solutions

**2.4, 5, and 6GHz BT/WiFi6E Mini Antenna, Single-feed, Tri-band, Corner Mount** **P/N 2450AD18A6050E-AEC**

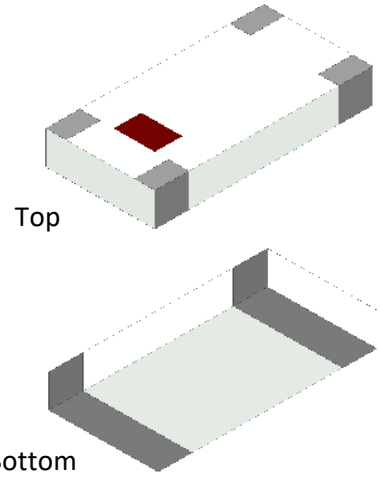
Detail Specification: 11/8/2021 

**AEC-Q200 Qualified**

## General Specifications

| | | | |
|---|---|---|---|
| **Part Number** | 2450AD18A6050E-AEC | | |
| **Frequency (MHz)** | 2400 - 2500 | 4900 - 5850 | 5850 - 7200 |
| **Peak Gain (dBi typ.)** | +1.9 (YZ-Total) | +1.1 (YZ-Total) | +3.0 (XZ-Total) |
| **Average Gain (dBi typ.)** | -1.2 (YZ-Total) | -2.0 (YZ-Total) | -1.1 (XZ-Total) |
| **Return Loss (dB)** | 6 min.@25°C 4.4 min.@105°C | 5 min.@25°C 4.4 min.@105°C | 5 min.@25°C 4.4 min.@105°C |
| **Radiation Efficiency %[1]** | 67 Ave. | 72 Ave. | 81 Ave. |
| **Impedance (Ω)** | 50 | | |
| **Power Capacity (W)** | 1 max. (CW) | | |
| **Operating Temp.** | -40°C to +105°C | | |
| **Reel Quantity (pcs./reel)** | 3,000 | | |
| **Recommended Storage Conditions and Period for unused Product on T&R** | +5°C to +35°C Humidity 45 - 75% RH 18 months max. | | |

[1]Efficiency measured on Johanson's evaluation board PN 2450AD18A6050-EB1SMA



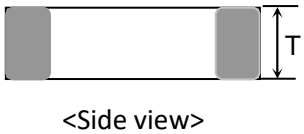

Use this antenna with our diplexers and filters to split the signal into the corresponding RF path. Go to page 7 for the links.

## Part Number Explanation

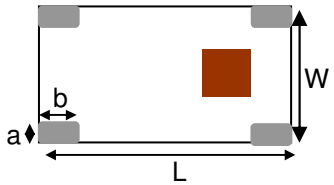
| | | | | |
|---|---|---|---|---|
| **P/N Suffix** | **Packing Style** | Bulk (loose pcs.) | Suffix = S | E.g. 2450AD18A6050S-AEC |
| | | T & R | Suffix = E | E.g. 2450AD18A6050E-AEC |
| | | 100% Tin | Suffix = E or S | E.g. 2450AD18A6050(E or S)-AEC |
| | **Evaluation Board** | 2450AD18A6050-EB1SMA (Pre-tuned with SMA connectors) | | |

## Mechanical Dimensions

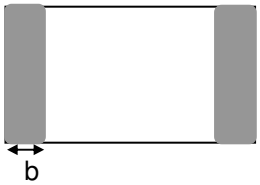
| | In | mm |
|---|---|---|
| **L** | 0.126 ± 0.008 | 3.20 ± 0.20 |
| **W** | 0.063 ± 0.008 | 1.60 ± 0.20 |
| **T** | 0.020 ± 0.004 | 0.50 ± 0.10 |
| **a** | 0.012 +0.004/+0.008 | 0.30 +0.1/-0.2 |
| **b** | 0.020 ± 0.004 | 0.50 ± 0.10 |



<Side view>



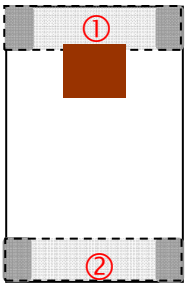
<Top view>



<Bottom view>

## Terminal Configuration

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

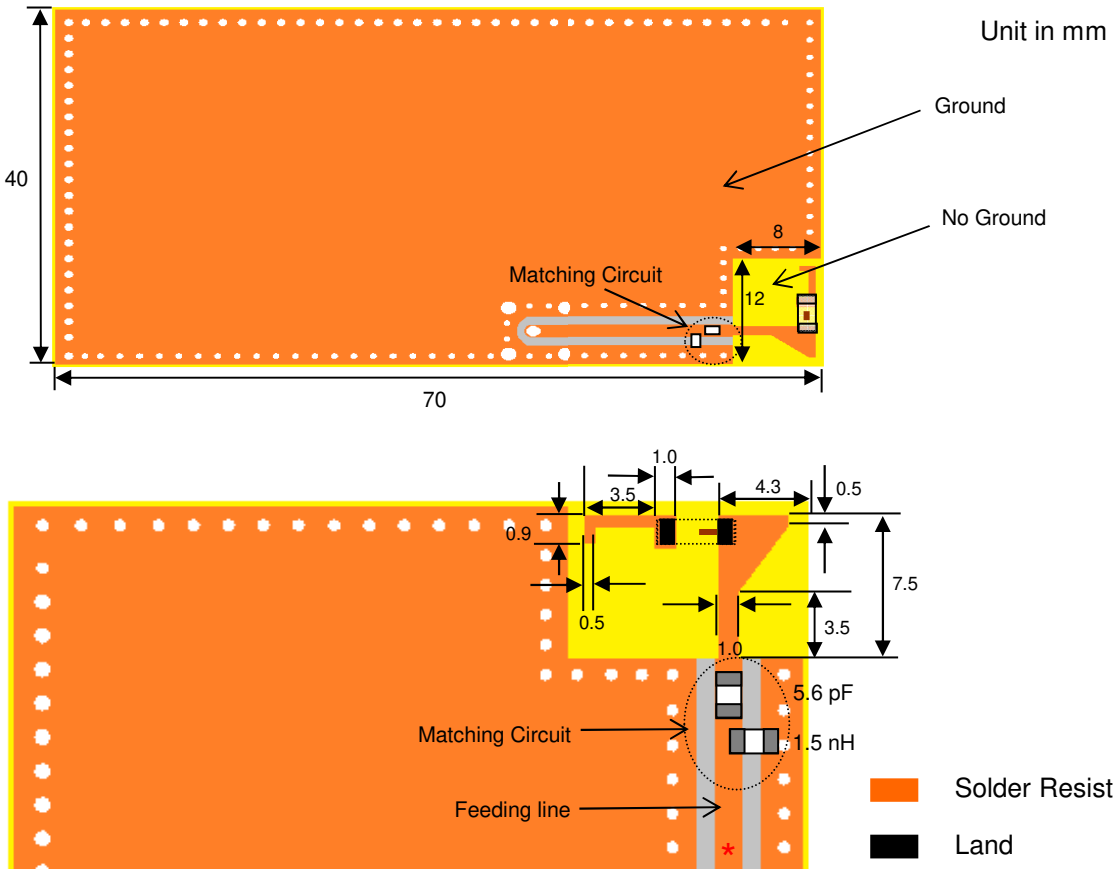



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## Mounting Considerations




*Line width should be designed to match 50Ω characteristic impedance, depending on PCB material, thickness, and preferably CPWG (co-planar wave guide) type.

Note: Matching circuits and component values will be different on the client's design, depending on PCB layout, geometry, etc. It is recommended that the designer leave available slots for a "pi" (or shunt-series-shunt) network. The antenna matching network values you see here are used when antenna is mounted on Johanson's evaluation board.

Orderable pre-tuned 50Ω EVB with a female SMA connector, reference p/n. 2450AD18A6050-EB1SMA.
Click here: https://www.johansontechnology.com/request-a-sample

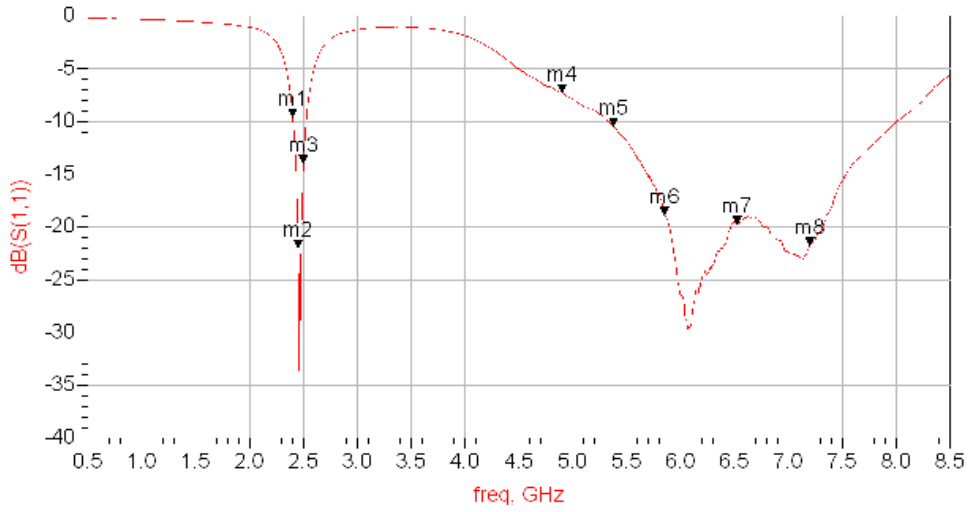

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## Typical Electrical Characteristics (T=25°C)

Return Loss with Matching Circuits




| | | |
|---|---|---|
| m1<br>freq=2.400GHz<br>dB(S(1,1))=-9.555 | m4<br>freq=4.900GHz<br>dB(S(1,1))=-7.272 | m7<br>freq=6.525GHz<br>dB(S(1,1))=-19.755 |
| m2<br>freq=2.450GHz<br>dB(S(1,1))=-21.986 | m5<br>freq=5.375GHz<br>dB(S(1,1))=-10.416 | m8<br>freq=7.200GHz<br>dB(S(1,1))=-21.746 |
| m3<br>freq=2.500GHz<br>dB(S(1,1))=-13.981 | m6<br>freq=5.850GHz<br>dB(S(1,1))=-18.867 | |

Need help laying out the antenna, want us to review your antenna design (free!), or would like us to measure and derive the new tuning values of your PCB (fee may apply).
Go to: https://www.johansontechnology.com/ask-a-question

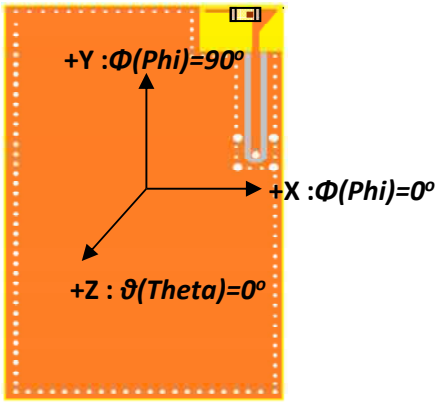

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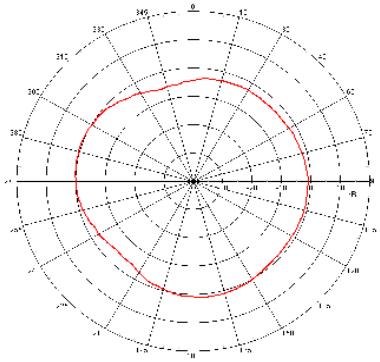

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## Typical Radiation Patterns

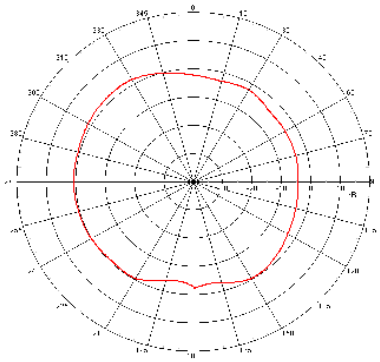
❖Radiation Patterns @ 2.45GHz



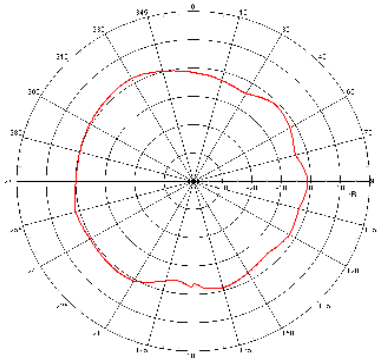

XY-Plane



XZ-Plane



YZ-Plane

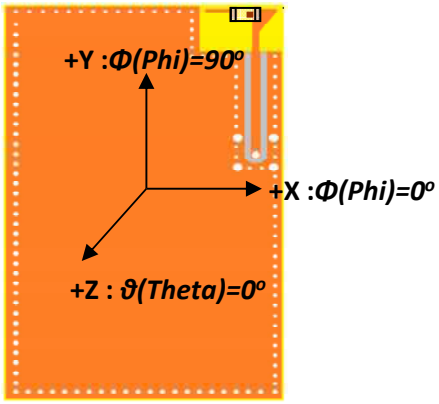


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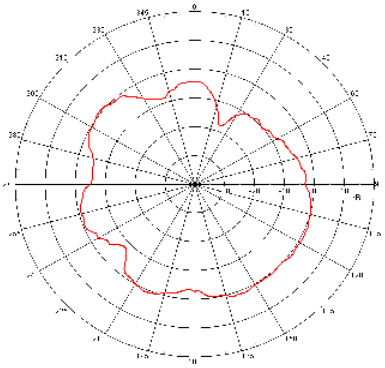

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## Typical Radiation Patterns

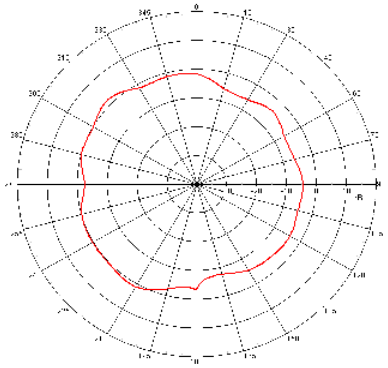
❖Radiation Patterns @ 5.375GHz



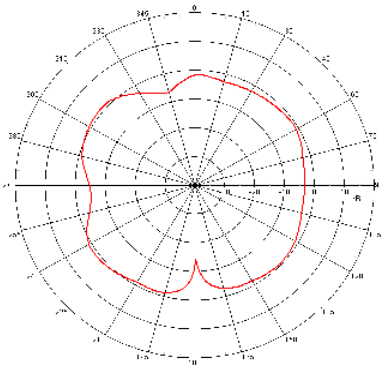

XY-Plane



XZ-Plane



YZ-Plane



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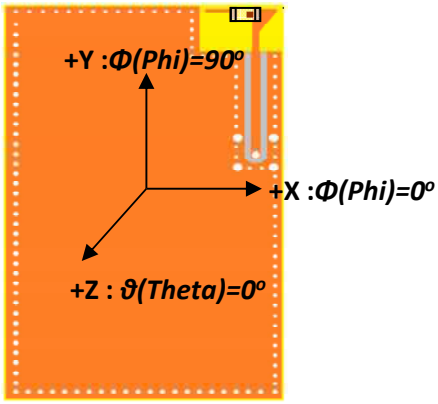
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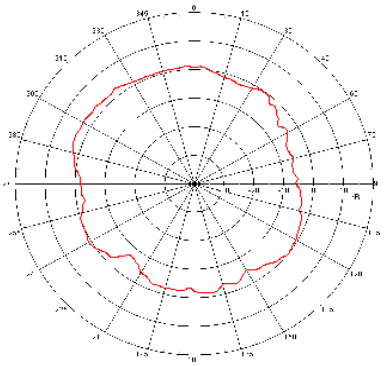
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## Typical Radiation Patterns

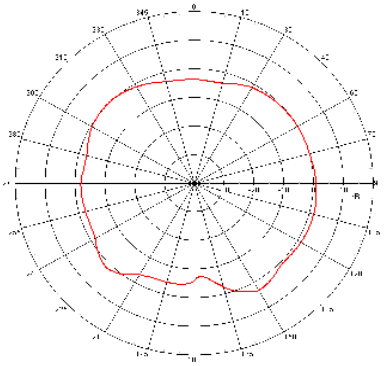
❖Radiation Patterns @ 6.525GHz



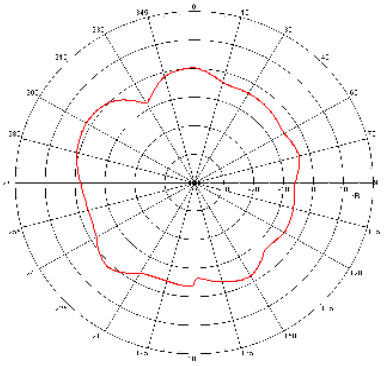

XY-Plane



XZ-Plane



YZ-Plane



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