High Frequency Ceramic Solutions

3.6 GHz Internal Chip Antenna, SMD 5G, n78 IoT Applications, and Related Frequency Operations

P/N 3600AT43A0400

Detail Specification: 6/13/2019

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

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

3600AT43A0400

General Specifications

<table>
<thead>
<tr>
<th>Part Number</th>
<th>3600AT43A0400</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency (GHz)</td>
<td>3.4 - 3.8</td>
</tr>
<tr>
<td>Peak Gain (dBi)</td>
<td>1.6 typ.</td>
</tr>
<tr>
<td>Average Gain (dBi)</td>
<td>-1.8 typ.</td>
</tr>
<tr>
<td>Radiated Efficiency¹</td>
<td>61%</td>
</tr>
<tr>
<td>Return Loss (dB)</td>
<td>9.5 min.</td>
</tr>
<tr>
<td>Impedance (Ω)</td>
<td>50</td>
</tr>
<tr>
<td>Input Power (W)</td>
<td>2 max. (CW)</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-40 to +85°C</td>
</tr>
</tbody>
</table>

¹Efficiency measured on Johanson’s evaluation board PN 3600AT43A0400-EB1SMA

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Part Number Explanation

<table>
<thead>
<tr>
<th>P/N Suffix</th>
<th>Packing Style</th>
<th>Suffix = S</th>
<th>e.g. 3600AT43A0400S</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Bulk (loose)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>T&amp;R</td>
<td>Suffix = E</td>
<td>e.g. 3600AT43A0400E</td>
</tr>
<tr>
<td></td>
<td>100% Tin</td>
<td>Suffix = E or S</td>
<td>e.g. 3600AT43A0400(S or E)</td>
</tr>
<tr>
<td>Evaluation Board</td>
<td>3600AT43A0400-EB1SMA</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Recommended Storage Conditions and Period for unused T&R Product

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

Part Number explanation

Part Number
P/N Suffix
Evaluation Board
3600AT43A0400-EB1SMA

Mechanical Dimensions

<table>
<thead>
<tr>
<th></th>
<th>In</th>
<th>mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>L</td>
<td>0.236 ± 0.008</td>
<td>6.00 ± 0.2</td>
</tr>
<tr>
<td>W</td>
<td>0.079 ± 0.008</td>
<td>2.00 ± 0.2</td>
</tr>
<tr>
<td>T</td>
<td>0.047 +0.004 / -0.008</td>
<td>1.20 /+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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https://www.johansontechnology.com

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Mounting Considerations 1: Evaluation Board (Standard Layout)

Would you like the layout files? Please send us a message at: https://www.johansontechnology.com/ask-a-question

Matching circuit values above only apply to our EVB. However, please follow this topology (shunt-shunt-series-shunt) and perform tuning to obtain the new values on your PCB

To order a pre-tuned 50Ω EVB with a female SMA connector click here: https://www.johansontechnology.com/request-a-sample
Reference p/n: 3600AT43A0400-EB1SMA
Mounting Considerations 1: Typical 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:
https://www.johansontechnology.com/ask-a-question

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Mounting Considerations 1: Typical 2D radiation patterns @ 3.6GHz

YZ-plane

XZ-plane

XY-plane

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<tr>
<th><strong>Antenna tuning, optimization, and validation services:</strong></th>
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<tr>
<td><a href="https://www.johansontechnology.com/ipc-antenna-services">https://www.johansontechnology.com/ipc-antenna-services</a></td>
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<th><strong>For more antennas and to download measured S-parameters, go to:</strong></th>
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Need help designing the antenna in? Use our antenna design services!  
[https://www.johansontechnology.com/ipc-antenna-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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