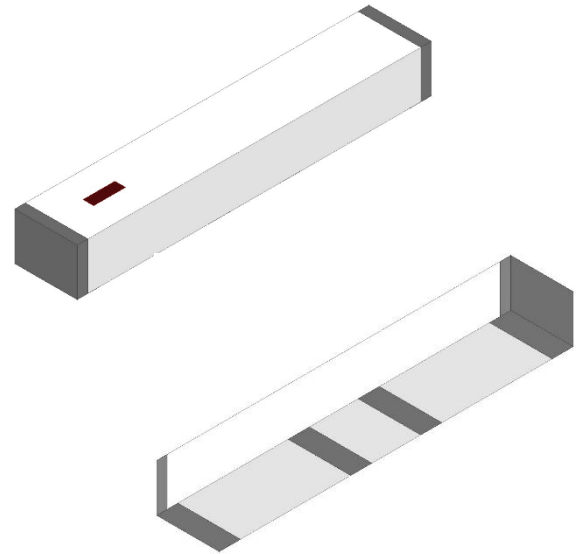


802.11ac Dual Band 2.45 and 5.5 GHz Chip Antenna, Corner Mount

Johanson Technology, Inc. (JTI) miniature RF ceramic chip antennas are made using Low Temperature Co-fired Ceramic (LTCC) technology which has the ability to embed low and high dielectric constants inside our antenna. This enables our components to have high detuning resilience and stability over extreme temperatures (~2ppm).

Recommended mounting locations for this antenna

PCB Corner



General Specifications^{1 2}

Passband Frequency (MHz)	2400 - 2500	4900 - 5875
Impedance (Ω)	50	50
Return Loss (dB)	8.5 Min.	8.5 Min.
Peak Gain (dBi)	2.0 Typ.	1.5 Typ.
Average Gain (dBi)	-0.5 Typ.	-1.0 Typ.
Average Radiated Efficiency (%)	73	82

Maximum Ratings

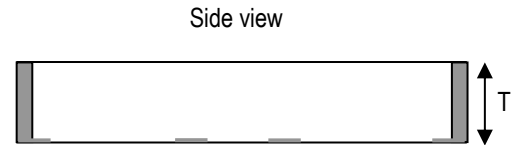
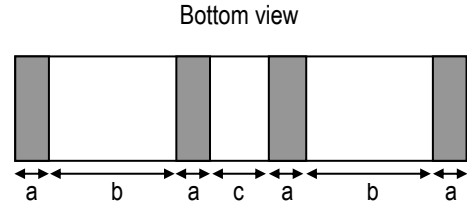
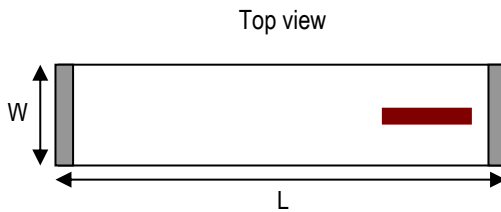
Power Capacity (W)	2 Max. (CW)
Operating Temperature ($^{\circ}\text{C}$)	-40 to +85
Recommended Storage Conditions post-installation ($^{\circ}\text{C}$)	-40 to +85
Recommended Storage Conditions and Period for Unused T&R Product	45% - 75% RH +5 to +35 $^{\circ}\text{C}$ 18 Months Max.

¹ Typical value represents average measurement at 25 $^{\circ}\text{C}$. Min./Max. values represent measurements over specified operating temperature.

² General specifications measured on Johanson's evaluation board P/N 2450AD46A540001CE1.

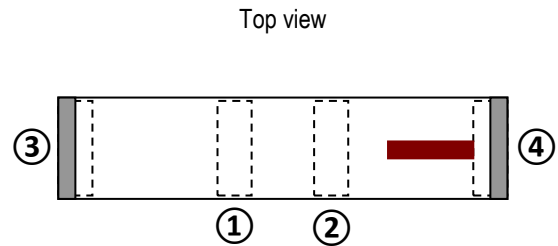
Mechanical Dimensions

	Inches		Millimeters	
L	0.335	± 0.008	8.50	± 0.20
W	0.063	± 0.008	1.60	± 0.20
T	0.047	+0.004/-0.008	1.20	+0.10/-0.20
a	0.020	± 0.006	0.51	± 0.15
b	0.104	± 0.006	2.64	± 0.15
c	0.046	± 0.006	1.18	± 0.15



Terminal Configuration^{3 4}

Pin Number	Function
1	5.4 GHz Feed
2	2.45 GHz Feed
3	NC
4	NC

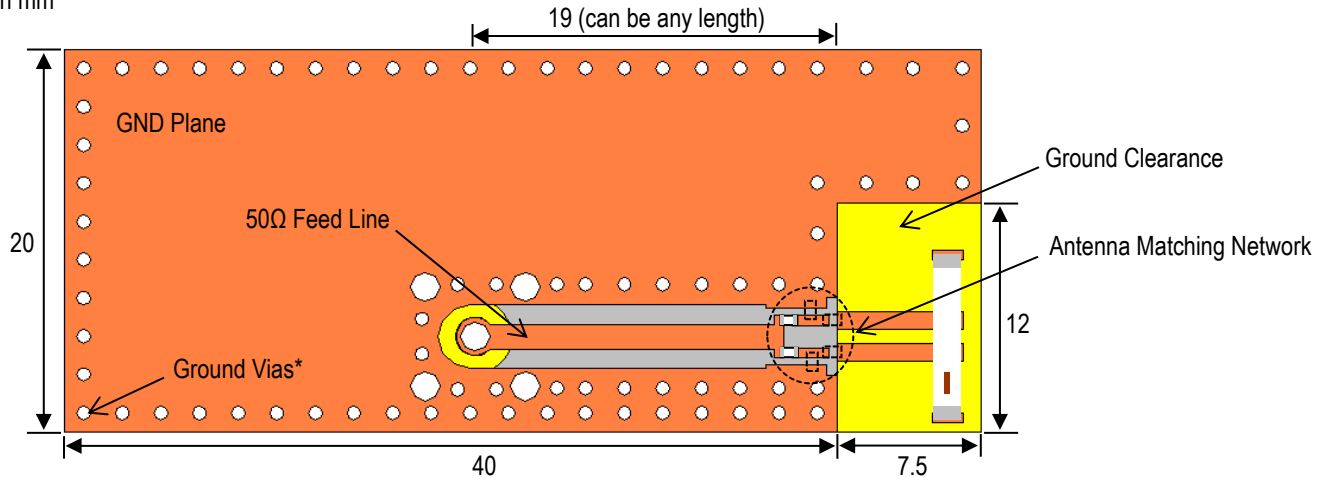


³ Even though terminals 3 and 4 are NC ("No Connect"), they must be soldered down to the landing pad for proper operation.

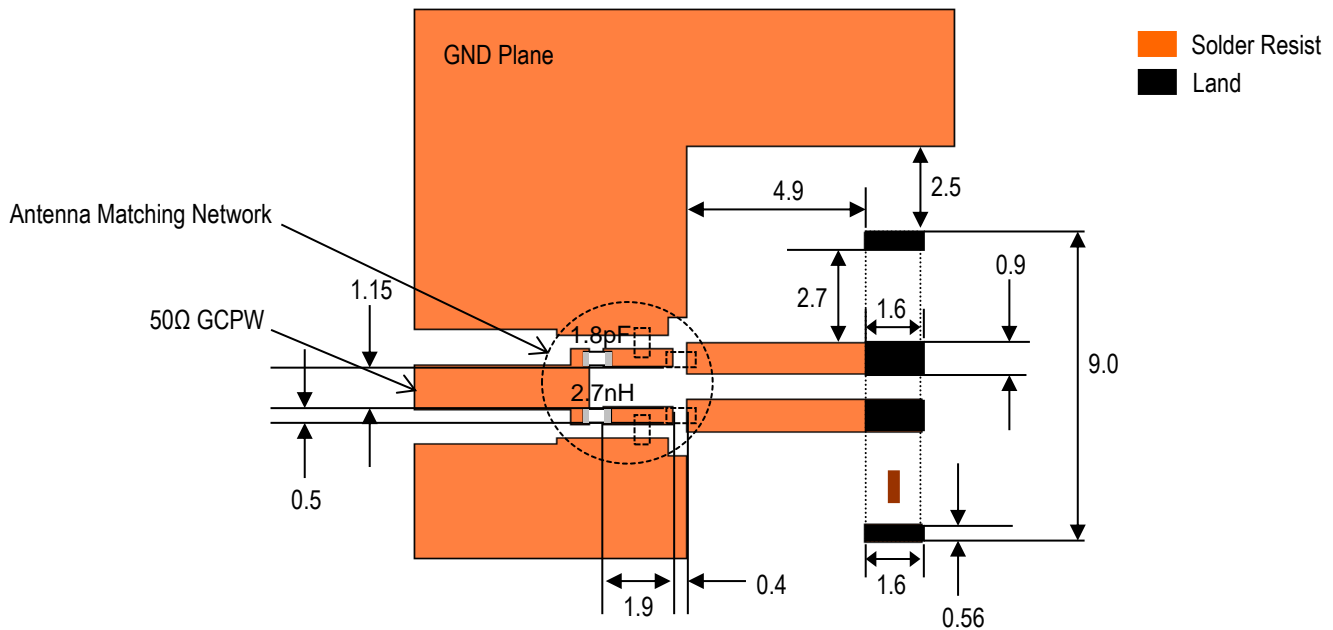
⁴ The termination type is Nickel Tin. Go to: <https://www.johansontechnology.com/ipcsoldering-profile> for Typical Soldering Profile.

Evaluation Board and Recommended Mounting Configuration (P/N 2450AD46A540001CE1)

All units in mm



*Note: Ground Vias are highly recommended to have better antenna efficiency.



JTI P/Ns for Matching Network⁵

Capacitor (1.8pF): QSCF500Q1R8B1GV001T

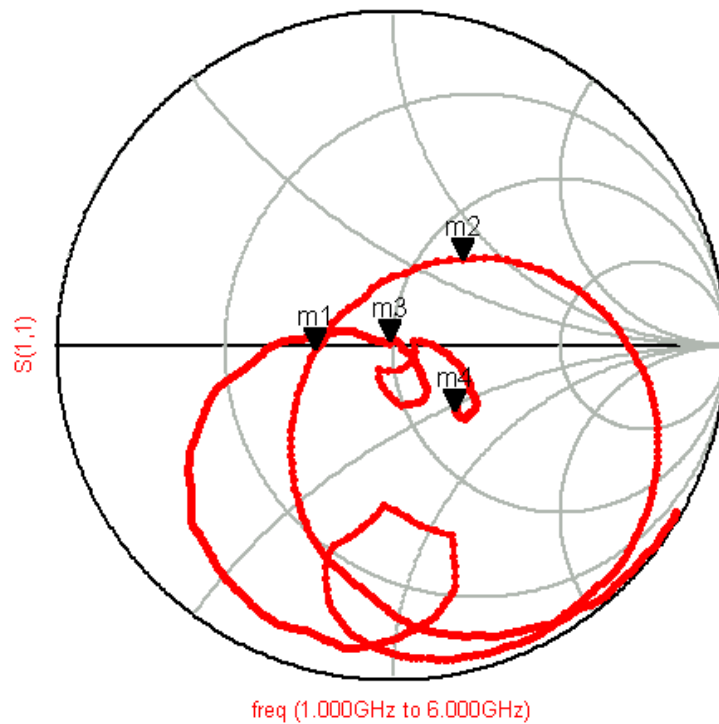
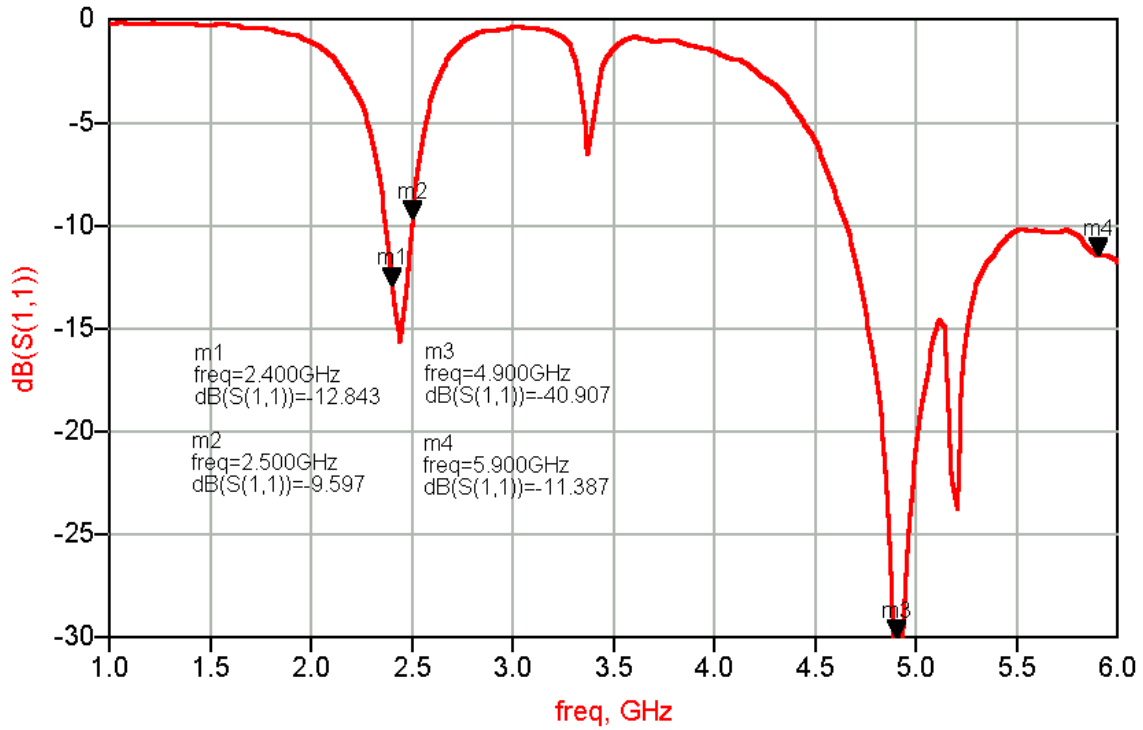
Inductor (2.7nH): LRC0402CS2N7GV001T

If you'd like the CAD PCB layout or have any questions,
contact our application engineers at <https://www.johansontechnology.com/ask-a-question>

⁵ It is recommended that the designer leave available slots for a "T" (or series-shunt-series) network. The antenna matching network values above are used when the antenna is mounted on Johanson's evaluation board. The optimal matching values will vary depending on the layout, thickness, material, etc. Go to: <https://www.johansontechnology.com/tuning> for more information.

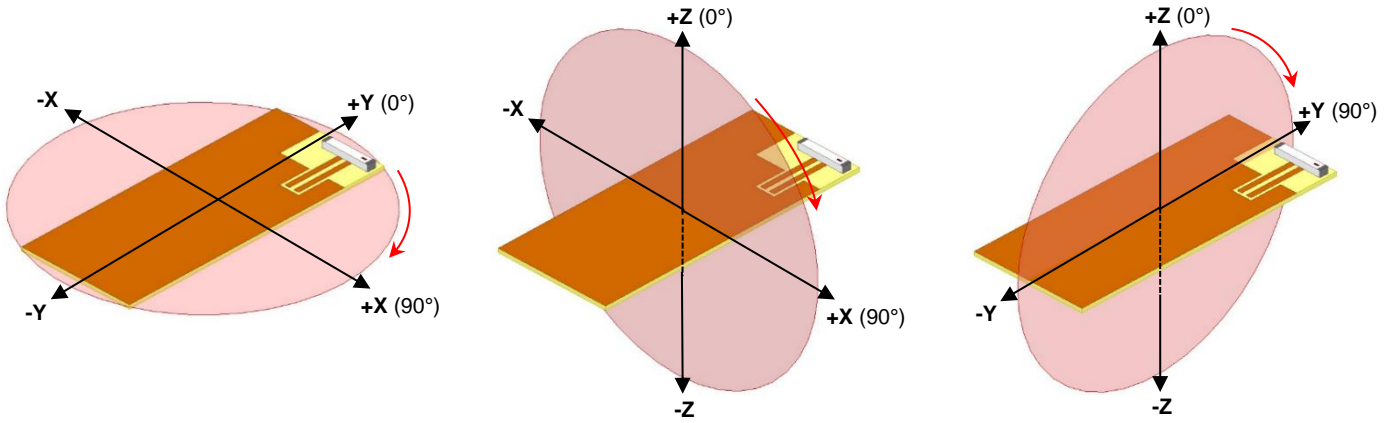


Evaluation Board Typical Measurement (P/N 2450AD46A540001CE1)

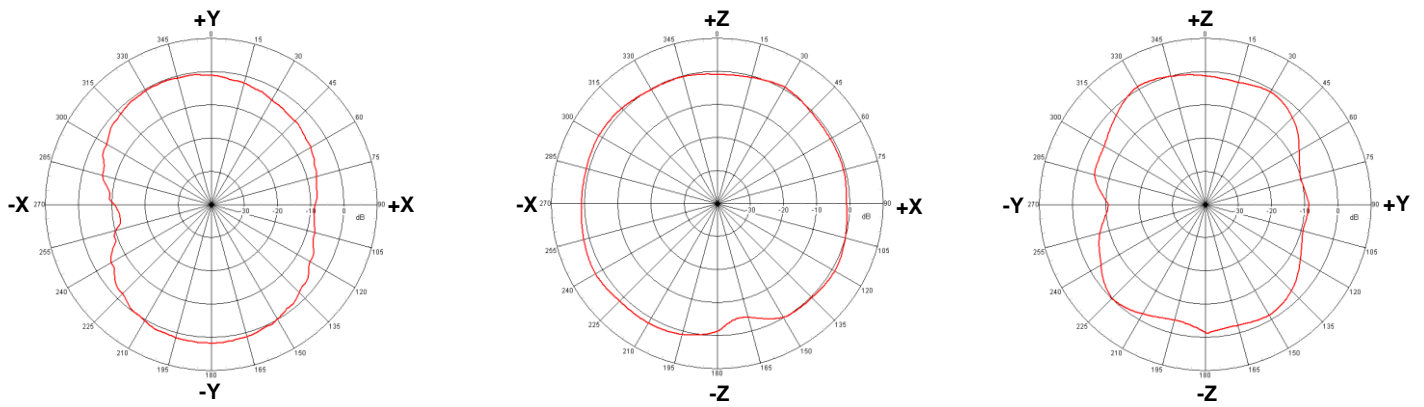




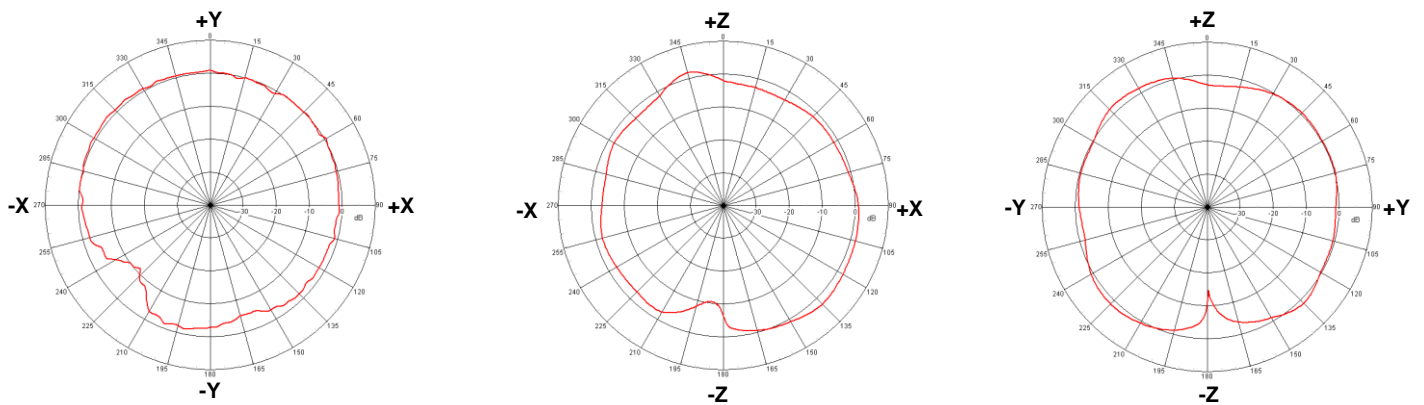
Evaluation Board Typical 2D Radiation Patterns (P/N 2450AD46A540001CE1)



@2.45GHz Band

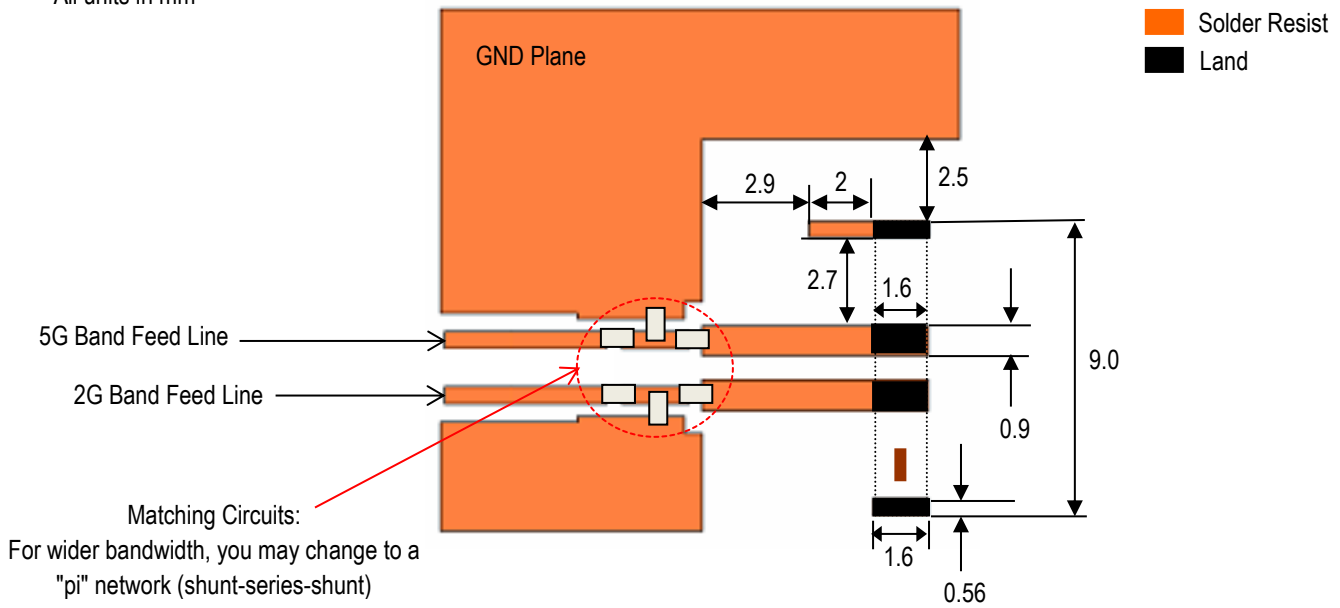


@5.4GHz Band

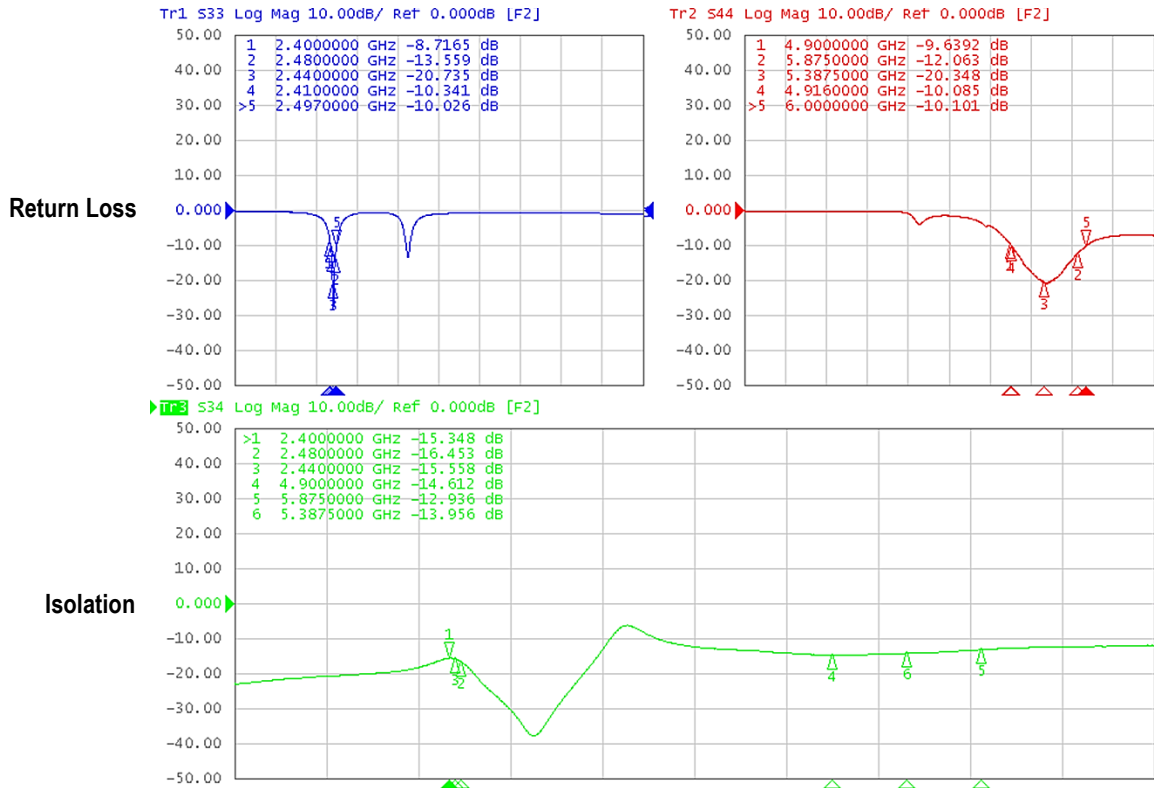


Two Separate Feeds Mounting Configuration (For reference only, no evaluation board available)

All units in mm



Return Loss and Isolation Measurement

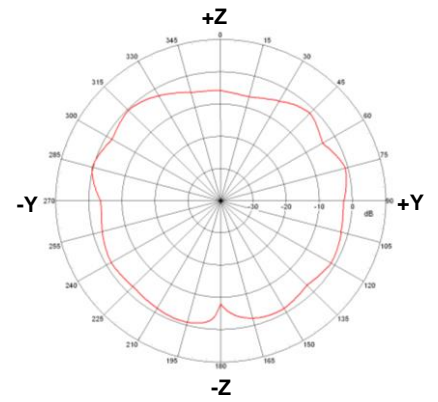
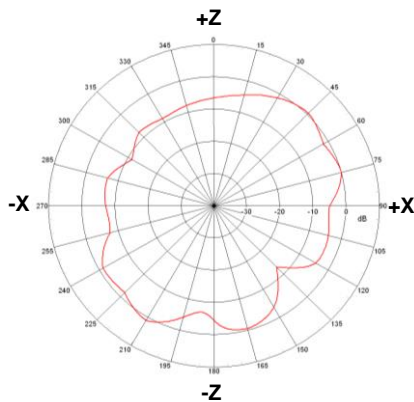
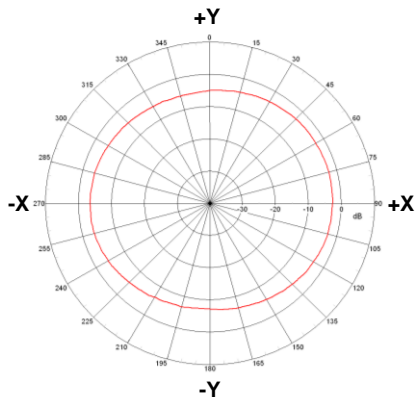




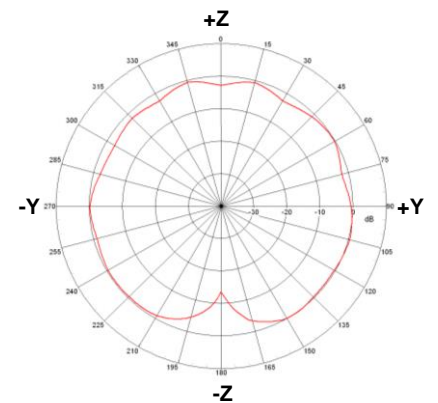
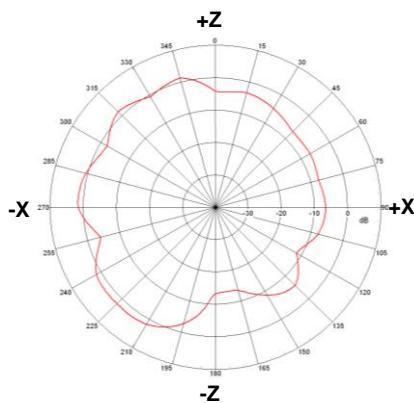
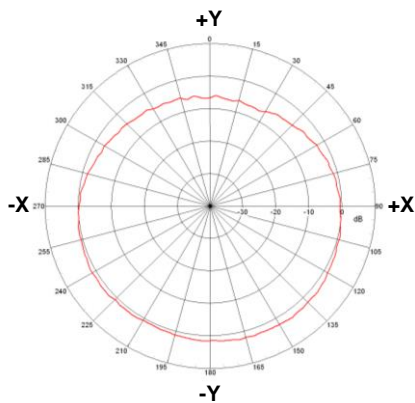
Two Separate Feeds Measured 2D Radiation Patterns and Efficiency

Unit in dBi @2400 - 5950 MHz	XY-plane		XZ-plane		YZ-plane		Total Radiated Efficiency
	Peak	Average	Peak	Average	Peak	Average	
2440 MHz	0.9	-4.1	0.2	-2.6	-2.7	-4.5	52%
5387.5 MHz	2.3	-1.1	2	-3.1	0.1	-1.6	70%

@2.44GHz Band

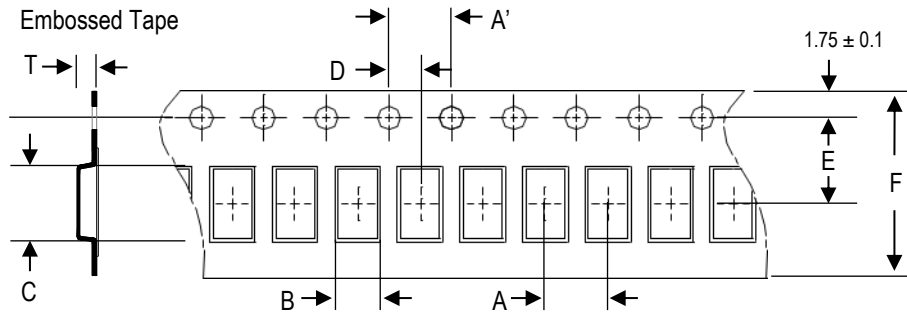


@5.4GHz Band



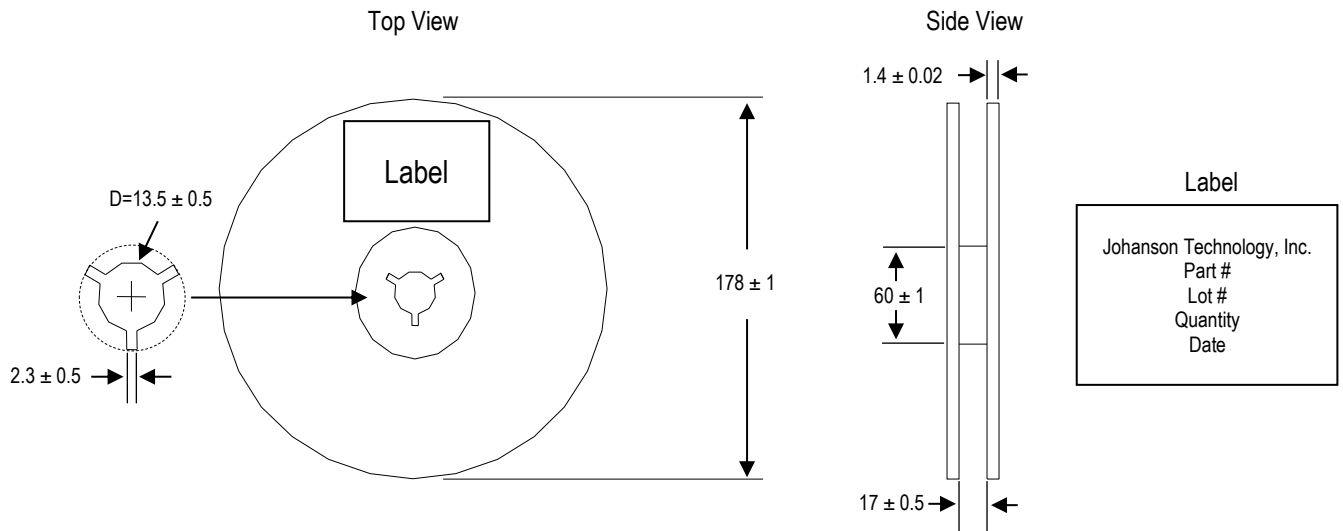
Tape and Reel Specification (Units in mm)

Tape Dimensions

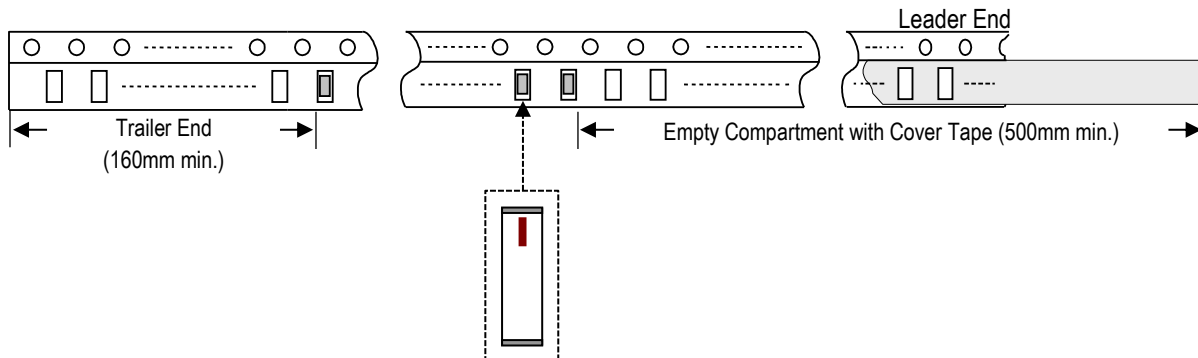


A	A'	B	C	D	E	F	T	Quantity/reel	Tape material
4.0±0.1	4.0±0.1	1.85±0.1	8.7±0.1	2.0±0.05	7.5±0.1	16.0±0.2	1.4±0.01	1,000pcs.	Plastic (Embossed)

Reel Dimensions



Leader and Trailer Dimensions



Orderable Part Number

Packaging Style	Part Number	Termination
Bulk (loose pcs.)	2450AD46A540001B	Nickel Tin
T & R (7" Reel Embossed Tape)	2450AD46A540001E (Qty: 1,000 pcs./reel)	
Evaluation Board with 1 SMA Connector	2450AD46A540001CE1	

Important Links

[2450AD46A540001E Product Page](#)

[More Chip Antennas](#)

[Antenna Tuning, Optimization, and Validation Services](#)

[Soldering Information](#)

[MSL Information](#)

[Packaging Information](#)

[Recommended Storage Condition and Max Shelf Life](#)

[RoHS Compliance](#)

Contact our application engineers for a PCB layout review.

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