

High Frequency Ceramic Solutions

AEC-Q200 Qualification Available

2.4GHz Mini Patch Antenna, RHCP, Dual-feed, SMD

P/N 2440AT62B0085

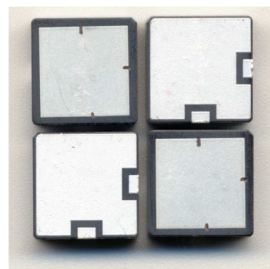
Detail Specification: 10/10/2019

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

General Specifications*

Part Number	2440AT62B0085		
Frequency (GHz)	2.4 - 2.485		
Min. Radiated Efficiency	70%		
Axial Ratio	3.0 max.		
Peak Gain (dBi)	2.1 typ.		
Average Gain (dBi)	1.3 typ.		
Return Loss (dB)	7 min.		
Polarization	RHCP		Recommended Storage Conditions and Period for unused T&R Product
Impedance (Ω)	50		
Input Power (W)	2 max. (CW)		+5 to +35°C Humidity 45 - 75% RH 18 months max.
Operating Temperature	-40 to +85°C		
	Reel Quantity (pcs/reel)	600	



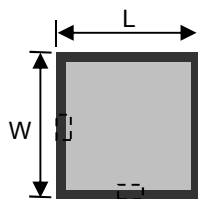
*Performance based on pairing antenna with 90° coupler [2450CH15A0100](#). See page 5 for more.

Part Number Explanation

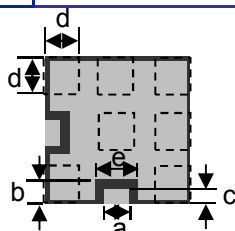
P/N Suffix	Packing Style	Bulk (loose)	Suffix = S	e.g. 2440AT62B0085S
		Tray	Suffix = E	e.g. 2440AT62B0085E
		100% Tin	Suffix = E or S	e.g. 2440AT62B0085(E or S)
	Evaluation Board	2440AT62B0085-EB1SMA		

Mechanical Dimensions

	In	mm
L	0.472 ± 0.008	12.00 ± 0.2
W	0.472 ± 0.008	12.00 ± 0.2
T	0.157 ± 0.004	4.00 ± 0.1
a	0.079 ± 0.008	2.00 ± 0.2
b	0.079 ± 0.008	2.00 ± 0.2
c	0.047 ± 0.008	1.20 ± 0.2
d	0.118 ± 0.008	3.00 ± 0.2
e	0.142 ± 0.008	3.60 ± 0.2



Top View



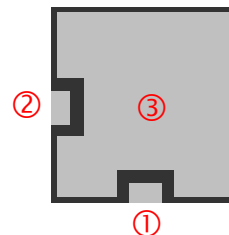
Bottom



Side View

Terminal Configuration

No.	Function
1	FEED 1
2	FEED 2
3	GND



Bottom

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<https://www.johansontechnology.com>

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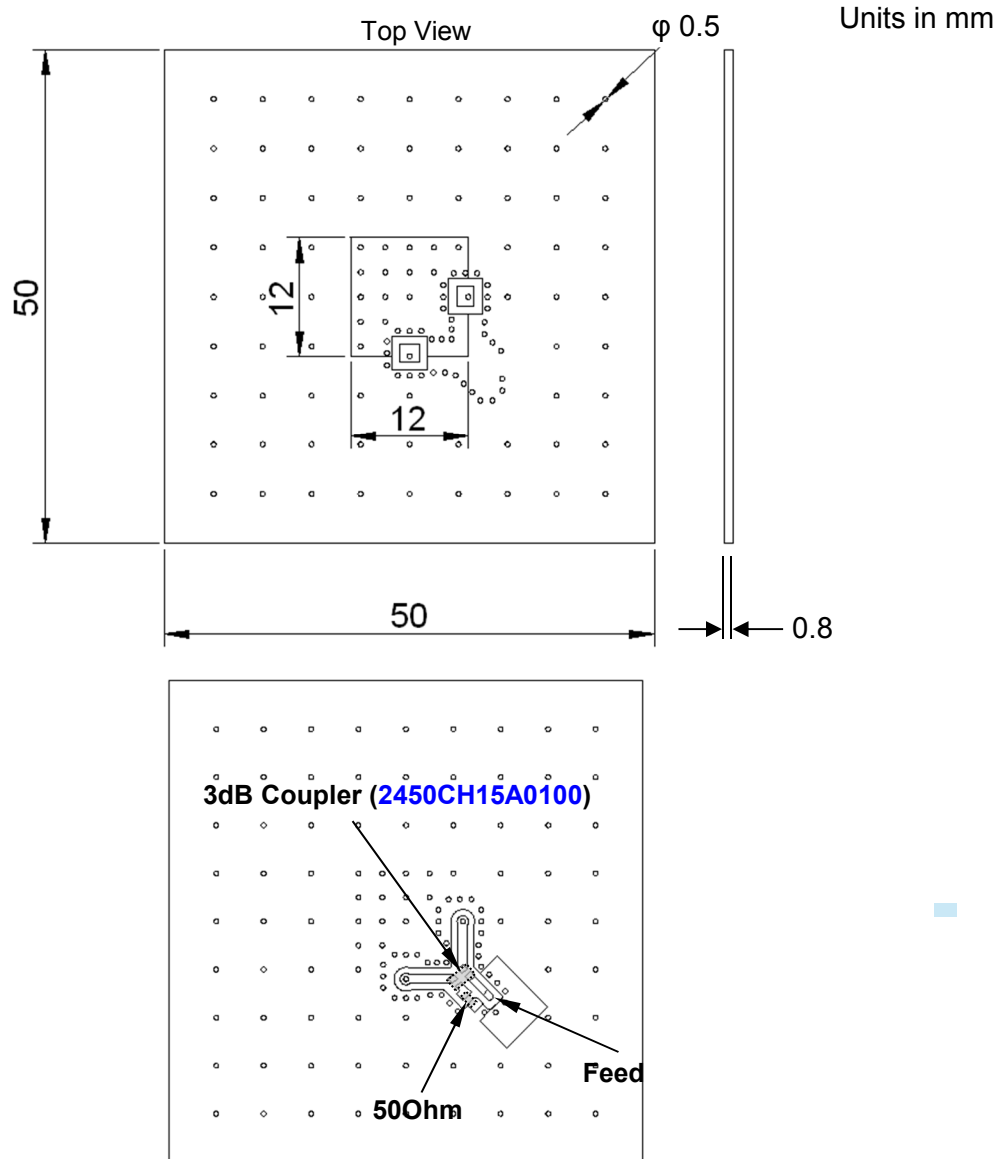
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Mounting Considerations 1: Evaluation Board



Would you like the layout file?

Contact our engineers at: <https://www.johansontechnology.com/ask-a-question>

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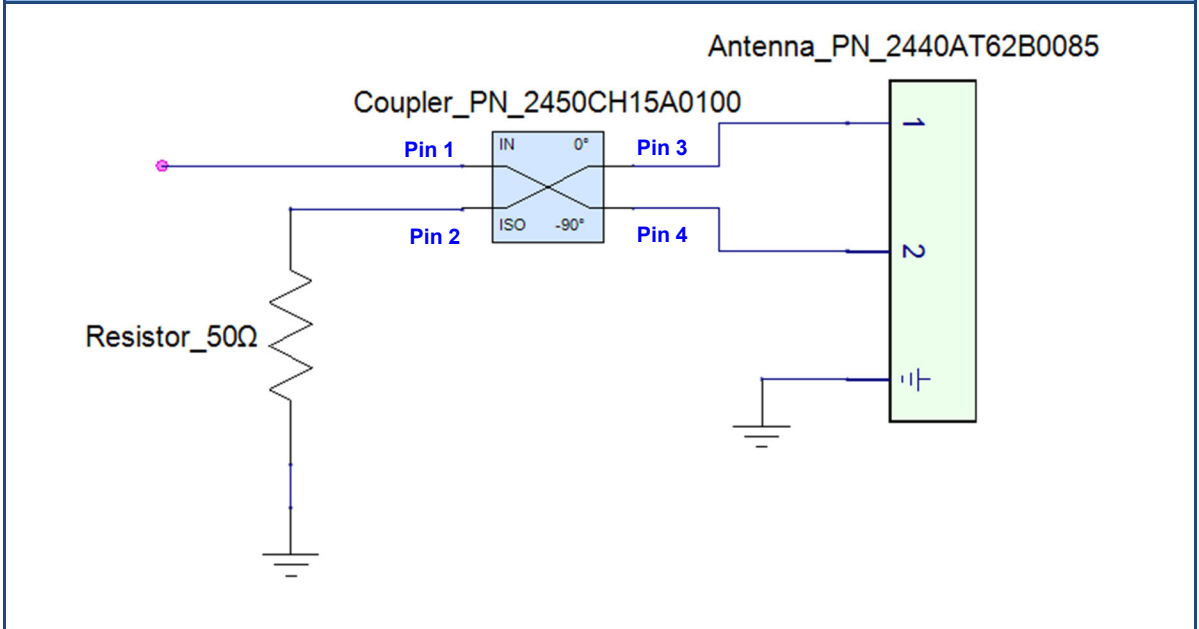
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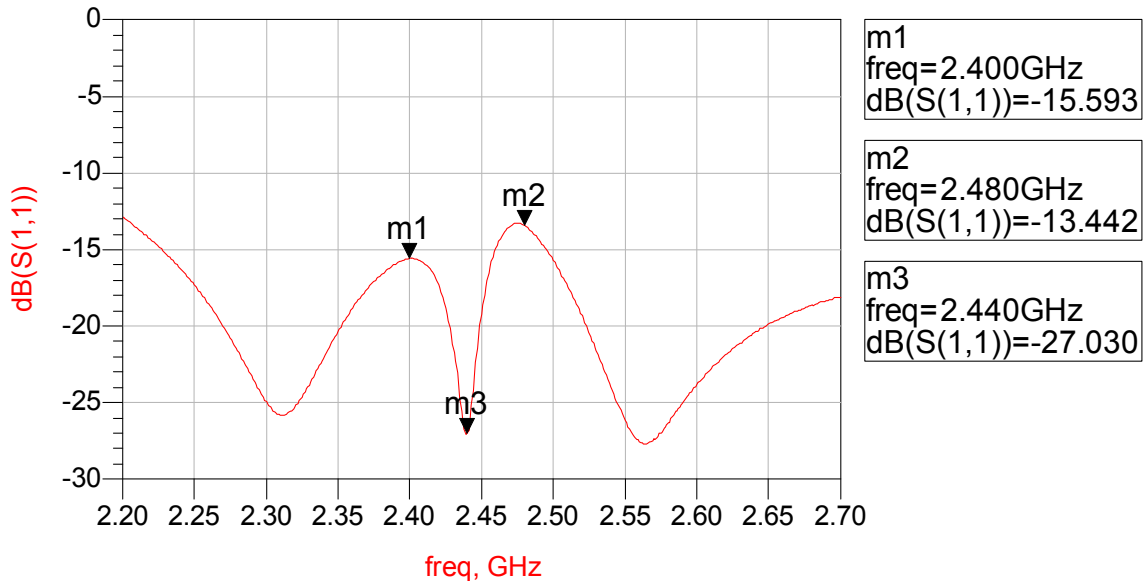
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Schematic



Mounting Considerations 1: Electrical Performance @25°C

Measured Return Loss



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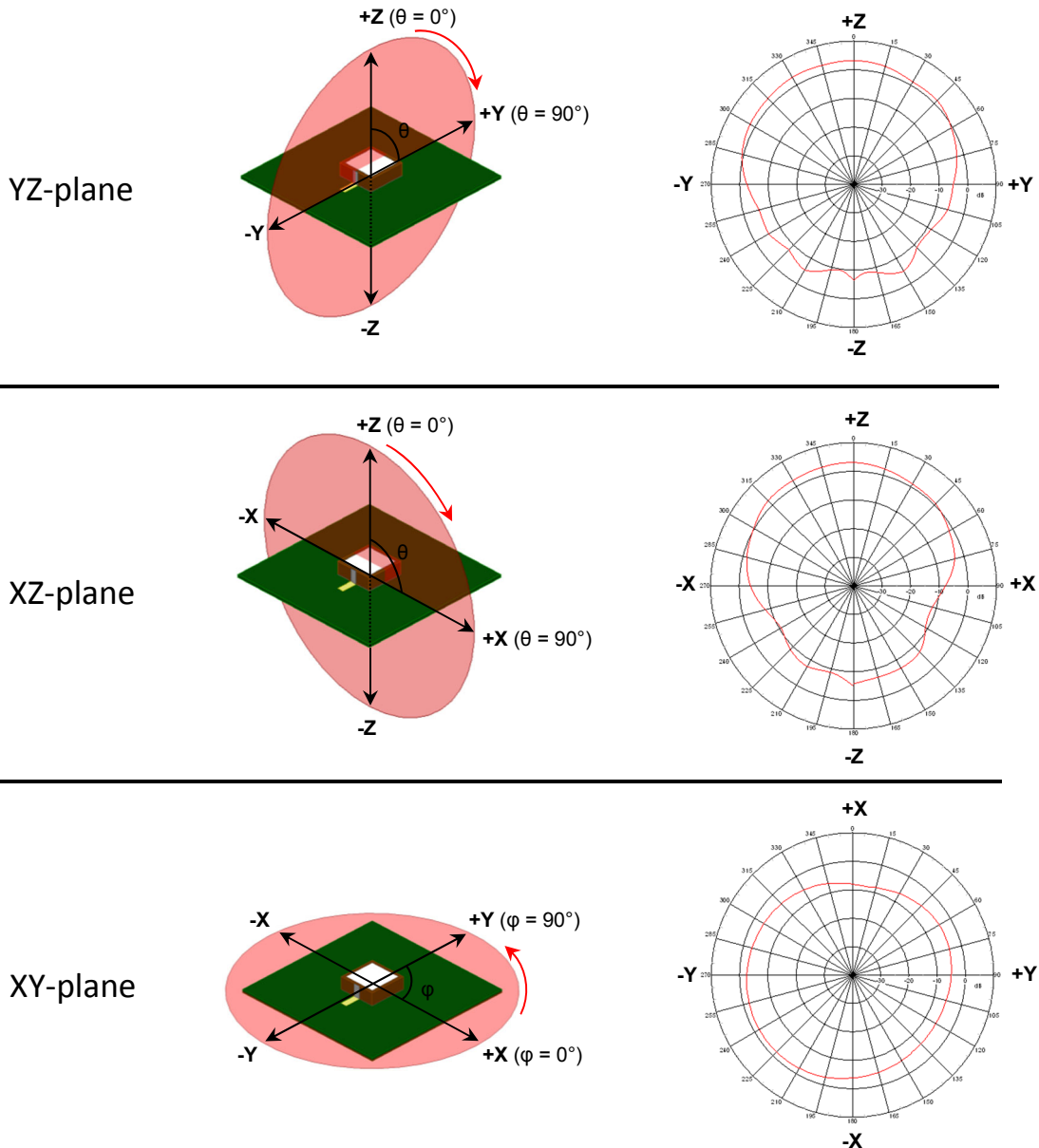
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Mounting Considerations 1: Antenna Performance

Typical 2D radiation patterns @ 2.44GHz



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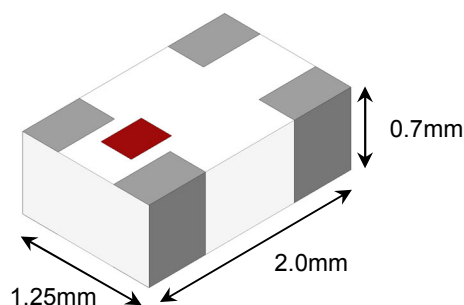
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90° Hybrid Coupler/Splitter (2450CH15A0100)

To minimize axial ratio, this patch antenna is designed with a dual-feed with inputs 90° apart in phase. Johanson Technology's hybrid coupler 2450CH15A0100 provides this and is the recommended solution for this purpose.

Additional information can be found in the official datasheet here:

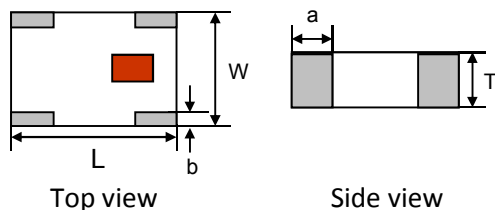
<https://www.johansontechnology.com/datasheets/2450CH15A0100/2450CH15A0100.pdf>



Part Number	2450CH15A0100	Recommended Storage Conditions and Period for unused T&R Product	+5 to +35°C Humidity 45 - 75% RH 18 months max.
Frequency (GHz)	2.4 - 2.5		
Insertion Loss (dB)	3.3 ± 0.5 max.	Reel Quantity (pcs/reel)	4,000
Return Loss (dB)	14.0 min.		
Phase Balance	90° ± 3		
Amplitude Balance	1.0 max.		
Isolation	15.0 min.		
Power Capacity (W)	1 max. (CW)		
Impedance (Ω)	50		
Operating Temperature	-40 to +85°C		

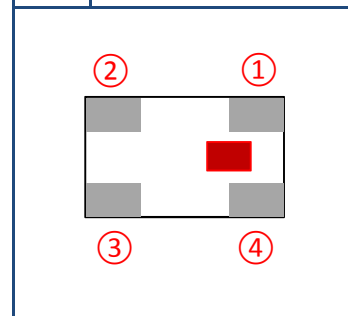
Mechanical Dimensions

	In	mm
L	0.079 ± 0.004	2.00 ± 0.10
W	0.049 ± 0.004	1.25 ± 0.10
T	0.028 ± 0.004	0.70 ± 0.10
a	0.022 ± 0.010	0.56 ± 0.25
b	0.014 ± 0.006	0.35 ± 0.15



Terminal Configuration

No.	Function
1	50Ω Terminated
2	IN
3	OUT2
4	OUT1



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Antenna tuning, optimization, and validation services:

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

2450CH15A0100 Coupler Datasheet

<https://www.johansontechnology.com/datasheets/2450CH15A0100/2450CH15A0100.pdf>

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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